

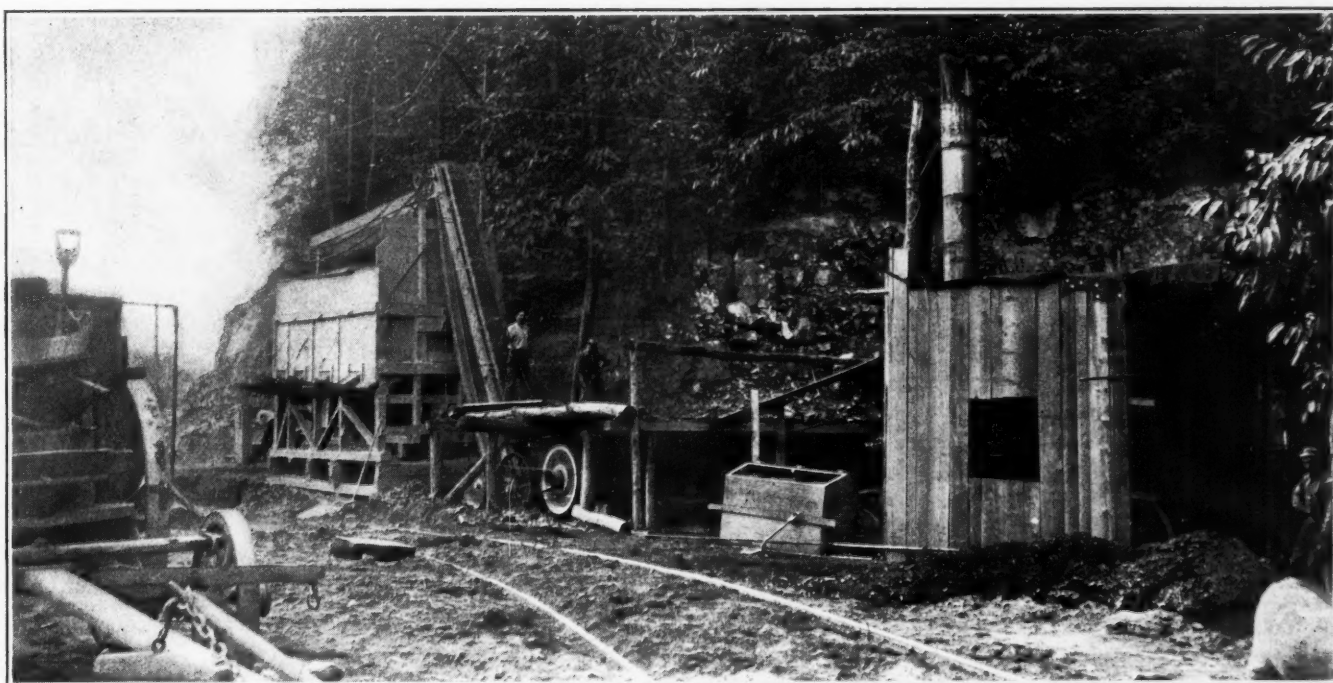
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No. 9.



CONTRACTOR'S PLANT AND QUARRY—HOLYOKE-NORTHAMPTON ROAD

BUILDING THE HOLYOKE ROAD

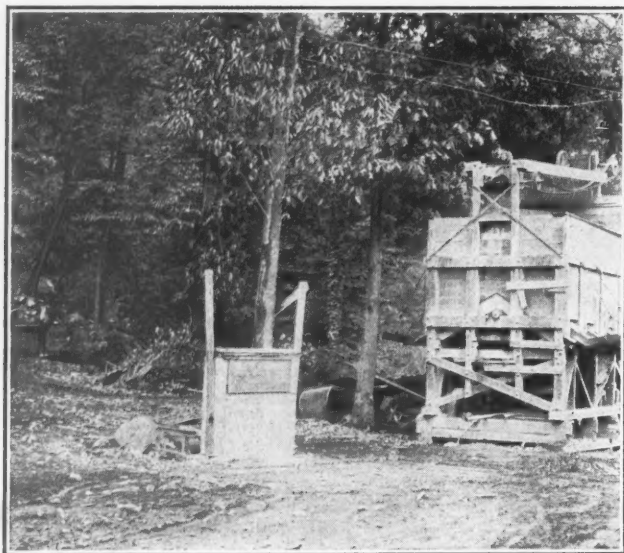
Important Section of Massachusetts State Highway System Completed—Heavy Grading—Problems in Location
—Contractor's Plant—Trolley Freight Cars for Hauling Stone—Details of Construction

AN important link in the Massachusetts State Highway System will be completed when a section of the Holyoke Road to Northampton now in course of construction is finished. Holyoke, a city of 55,000 population, is 8.4 miles from Northampton, which contains 23,000 inhabitants. The only direct road connecting them has been improved from time to time, but over two miles of it, from Smith ferry to the Northampton line, has remained an ordinary dirt road, in exceptionally bad condition owing largely to natural difficulties in drainage. The road follows the general course of the Connecticut river on its western side though in places at a considerable distance from it. On the east side of the road is the right of way of a steam road, its embankments being often higher than the road. On the east side of the highway itself is a single trolley line. On the west are hills or mountains in some places with long, sloping sides which gather large amounts of water and turn it toward the river. In one place along the new road the fields

are low immediately next to the road and in these, in the spring of the year and at other times, water stands in temporary ponds.

The difficulties in drainage, together with the fact that the work consists in widening the roadbed and straightening the alignment and grades, make the contract one of heavier and more expensive construction than in the average work of the Massachusetts State Highway Commission. The cost, which will be about seven thousand dollars to the mile, though high for Massachusetts practice is lower than equally good roads can be built for in some States, Ohio for example. This is due to deposits of trap rock favorably located. Not far from the middle of the section is a ledge of trap rock close to the road. This is the key to the job and here the contractor has made his headquarters.

The chief piece of machinery is an Acme Road Machinery Company's rock crushing outfit, consisting of boiler, engine,



SCALES AT CRUSHER FOR WEIGHING STONE

rock crusher and portable screen and stone bin. The boiler also supplies steam to two Wood drills operating in the quarry where the rock is sufficiently solid to require blasting. Much of the rock around the top and edges of the ledge, shown in the center of the illustration used as a frontispiece, is broken up and loose enough so that it can be dug out with picks and bars and sledged up in suitable shape for the crusher. Water for the boiler and the watering cart used to sprinkle the roadbed and supply the steam roller is obtained from the river, where a pump has been stationed operated by steam piped from the boiler.

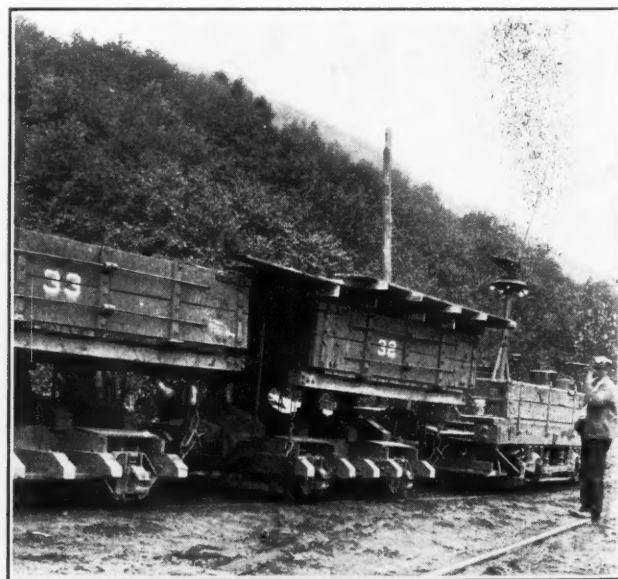
The track seen in the first illustration is a siding on which side-dumping freight trolley cars are brought to the bins, filled and carried to the work where wanted. The contractor employs but one team and wagon of his own on the work for general purposes and hires carts to carry the rock from the face of the ledge to the crusher platform. The team is housed in a shed in a sheltered spot not far up the road. The trap rock is very hard but crushes up into well shaped stones, fairly cubical in shape, but inclined slightly to an excess of flat shaped pieces. The maximum output of the crusher up to the time the photographs were taken had been 112 tons of stone per day. The trolley cars are the regular construction cars owned by the trolley road. As shown in the cut below, they have been filled with stone and pulled away from the crusher but are still on the siding. The other track shown is the main trolley track. All crushed stone supplied for the job is paid for by weight and the contractor supplies a platform scale for the purpose. The commission employs an official weigher to keep the records.

At the time of writing, the stone crushing had only fairly well begun—perhaps a thousand lineal feet of roadway had been finished. The grading, culvert work and construction of some 1,400 lineal feet of V drain had been finished. The grade stakes for the road are set by engineers from the Division Engineer's office at Pittsfield. The stone roadway is 15 feet in width and earth shoulders three feet wide are built on each side. The specifications require that the roadbed be graded to true lines and grades in conformity with plans, profiles and cross sections and so shaped that when the stone is rolled in place the surface of the roadway shall have such crown as the engineer directs—in this instance 5 inches. All clay and spongy material had to be removed, and its place supplied with better material. As a general rule the natural roadbed is of good material, as would naturally be expected in a rocky, mountainous country. In places, however, the usual gravelly soil changes to a fine sand with some clay. In general, embankments are made from material from within the location of the road; material taken from outside the roadway is paid

for at a price bid and is classed as "borrow." In this case, owing to a relocation of the road, there was considerable embankment made of borrowed material. These embankments were formed of successive layers, 12 inches in thickness, each layer being rolled. All trees, stumps and roots within the roadbed and on slopes had to be grubbed up and removed without additional compensation. Ditches are dug of such width and depth as directed at the contract price for excavation. As is usual, material obtained from excavation within the limits of the location or slopes and used in embankments is paid for as excavation only. The contract provides compensation for overhaul of borrowed material, where it cannot be obtained within a distance of 1,000 feet of any point of the section under contract, measured along the shortest available route, at the rate of $\frac{1}{2}$ cent per cubic yard for each 100 feet of overhaul. Borrow pits are cross-sectioned and all quantities measured in the pit. The contractor used for this work teams at \$5.00 per day and carts at \$3.50. The estimated quantities of grading and the contract prices are as follows: 2,100 cubic yards excavation or embankment, \$.47 per cubic yard; 3,500 cubic yards borrow, \$.52.

The longitudinal grade of the road has been reduced so that it nowhere exceeds 5.6 per cent, and this for only one hundred feet. The road skirts the hills along the river in such a way that in the course of its $2\frac{1}{4}$ miles of length its lowest point is 73 Holyoke datum level and its highest 103. The cuts are partly rock cut. The deepest of these is shown in illustration on page 284, where the steam roller is taking water from the wagon. The cut through rock is almost five feet and here also is the steepest grade. Only such ledge as requires blasting for its removal and boulders of $\frac{1}{2}$ cubic yard or more in volume are estimated as ledge excavation. No allowance for ledge excavation in the roadbed is made outside of or for more than 12 inches below the line indicated on the cross sections showing the finished surface, the side slopes being $\frac{1}{4}$ to 1. Allowance for ledge in drains is made on the basis of a width of trench of two feet and a depth of 4 inches below the invert. Allowance for ledge in gutters is made on the basis of the width of the gutter and 12 inches in depth below the finished surface. Altogether 600 cubic yards of ledge are allowed for in the estimate and the contract price is \$1.50 per cubic yard.

Culverts are of Portland cement concrete masonry paid for by the cubic yard at the rate of \$8 for all material except Portland cement. The culverts are put in where ordered. Culvert ends are laid parallel to the center line of the roadway. All masonry is measured in accordance with the dimensions shown in the plans. The concrete is composed of broken stone and screened gravel and sand, all of which is to be clean, hard,



TROLLEY FREIGHT CARS USED FOR HAULING STONE FROM CRUSHER

durable, sharp and free from clay, dirt and other objectionable material, Portland cement and fresh clean water. The proportions are one part of Portland cement, $2\frac{1}{2}$ parts of sand and 5 parts of broken stone or screened gravel. For all work less than 6 inches in thickness stones may vary from $\frac{1}{4}$ to $\frac{3}{4}$ inch; between 6 inches and 12 inches, from $\frac{1}{4}$ to $1\frac{1}{4}$ inches; and for more than 12 inches in thickness, from $\frac{1}{4}$ to $2\frac{1}{2}$ inches. Before the concrete is placed in the molds, a sheet iron plate is held in position, $1\frac{1}{2}$ inches from the surface of the mold or form. The space between this, the form and this separator is filled with mortar, mixed 1 to 1. Immediately after the space between the separator and the form is filled with mortar, the ordinary concrete is placed behind the separator, the separator removed, and the backing and facing thoroughly rammed together to a close bond. Expanded metal or twisted rods, furnished to the contractor by the Commission, are imbedded in the concrete by the contractor without extra compensation. The Commission furnishes the cement free at the nearest railroad freight station.

About 1,500 lineal feet of fencing are placed on the edges of embankments. The posts are chestnut or cedar, not less than 6 inches in diameter, spaced 8 feet apart on centers. The top rails are 4 inches square and the side rails 2 x 6 inches, of spruce or other satisfactory wood, long enough to extend over these posts and break joints. This work is paid for at the rate of \$.27 per lineal foot. Other miscellaneous work consists of setting 74 stone-concrete bounds which are furnished by the Commission at the nearest railroad freight station. They are 6 feet long and set with 6 inches projecting above the ground.



OLD ROADWAY FOLLOWED TO AVOID EXPENSE

For hauling and setting, the contractor gets \$1.50 each. One catch basin only is included in the work. This may be built of brick or concrete and costs \$35. About 50 feet of 12-inch iron pipe per culvert is furnished and set at a cost of \$2.10 per lineal foot.

The iron pipe is described as the best quality of water pipe, thoroughly coated with asphaltum and free from imperfections of any kind. Nothing but selected fine material, free from large stones, is placed around and under the pipe and it is to be tamped in by a thin iron tamping bar. All joints are made of natural cement mortar mixed in the proportion of one part of cement to one part of clean, sharp sand, carefully filled in all around the pipe. The ends of pipe drains used as culverts must be protected by concrete masonry or concrete walls. The masonry ends are paid for as concrete and excavation below 5 feet is paid for at the regular price for excavation.

Before the laying of the macadam courses began, some 1,400 lineal feet of roadway was given a special treatment with a stone filling. The sections so treated were those adjacent to the low fields where ponds of water stand after heavy rains and in other places where the soil was soft and indicated the occasional presence of unusual amounts of water. The stone filling is put in in the form of a V drain. The stones used are described as wall-stones or cobbles, ranging in sizes from the smallest obtainable to those not exceeding 8 inches



RELOCATED SECTION OF ROAD

in their longest dimension, with the larger stones placed at the bottom. The filled area covers the whole 15 foot width of the roadway. The stones are laid to a depth of 4 inches on the outer margin of the roadway and 18 inches in depth in the center. The underdrain thus formed along the center of the road is provided with outlets at suitable intervals. The stone used in this work is a conglomerate quarried near the north end of the work and such field stones as were available. About 700 cubic yards of this material were put in place. The contract price was \$.90 per cubic yard.

In the macadam construction, trap rock is used exclusively although the specifications permit the use of local rock of approved quality. The broken stone is laid in layers or courses. The lower course consists of stones that pass through a ring $2\frac{1}{2}$ inches in diameter and will not pass through a ring $1\frac{1}{4}$ inches in diameter. The upper course consists of those passing through a ring $1\frac{1}{4}$ inches in diameter and not through a ring $\frac{1}{2}$ inch in diameter. The lower course is laid 3 inches deep at the center and $2\frac{1}{2}$ inches deep at the side after rolling. The upper course is 2 inches deep in the center and 1 inch deep at the sides after rolling. Screenings are then spread over the surface and watered and rolled until the mud flushes to the surface. The screenings are half-inch stuff and finer.

All broken stone is required to be spread from carts by hand or from a dumping board or self-spreading carts. As shown in the illustration below, where the stone is brought in by trolley cars, spreading boards are used. In building macadam roads in many places in the West, the expense of moving the spreading boards is avoided, in the case of the large stones at any rate, by dumping the stone on the dirt and throwing it in place with stone forks. There may be a little waste in this way and possibly a little dirt gets into the macadam, but contractors who have been accustomed to use stone forks would not wish to give them up.

The contract price for all broken stone is \$1.45 per ton and 5,500 tons are estimated to do the work. The stone used has run 46 tons to 100 lineal feet of road. This has consisted so far of 26 tons of coarse stone, 12 tons of medium and 8 tons of screenings.



SPREADING STONE DELIVERED BY TROLLEY FREIGHT



SCENIC FEATURE—AN OLD ROCK CUT

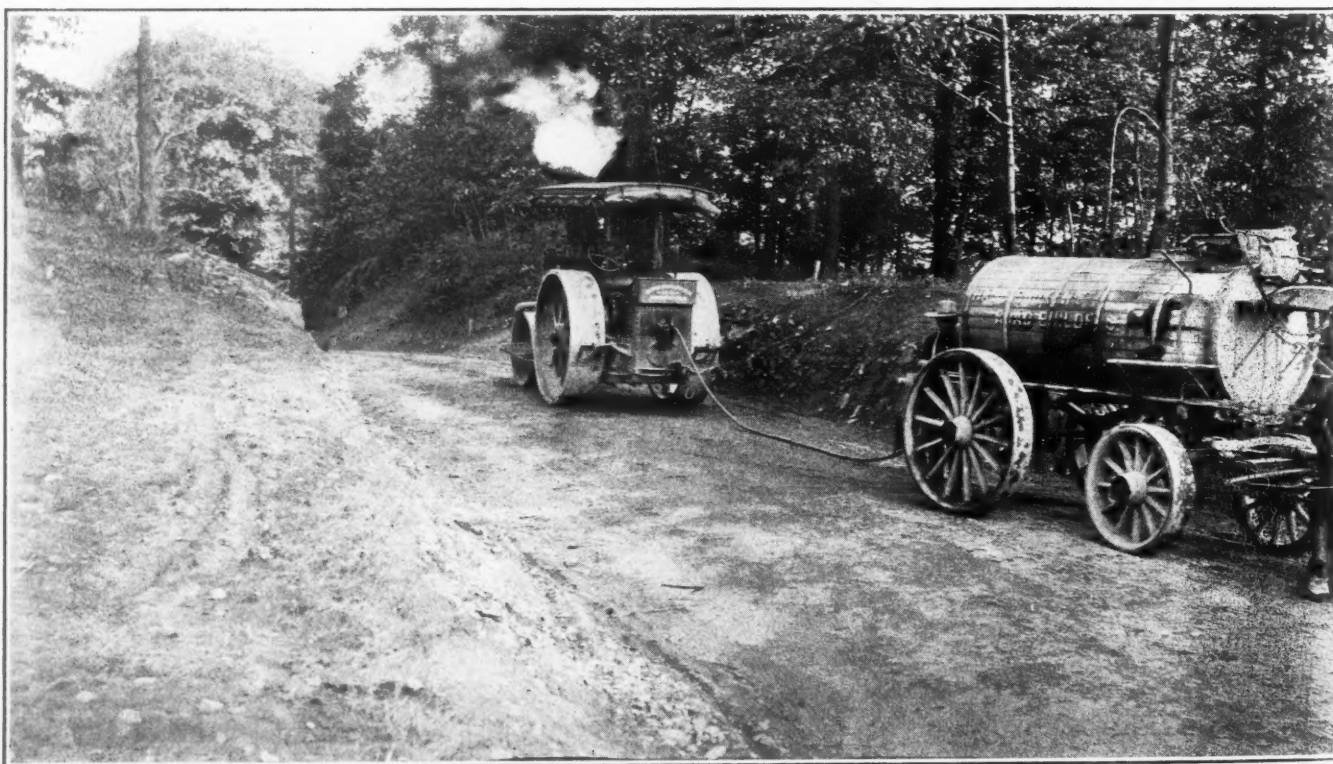
A section of the finished roadway, where the work began, at the north end, is shown in the illustration with a ledge on the left. The ledge was cut away many years ago as shown by the growth of trees. With the rocks and hills on the west and the Connecticut river on the east the Holyoke-Northampton road might lay claim to the title of a scenic highway. The little building on the right in the distance in this picture is the railroad freight station where materials supplied by the Commission are delivered.

The surface of the roadway is characteristically that of trap rock where no clay is used for binder. The stones are a little loose in places, not having been brought to their final positions by traffic. It is expected that next year a surface application of bitumen will be given this road. The section of the road from Holyoke up to the beginning of the new work was so treated last year. As seen from a trolley car it is in very fine condition; so good, in fact, that it is almost impossible to tell whether it is bituminous concrete, bituminous macadam or a surface application of bitumen; although the occasional presence of sections where there is a surplus of bitumen and others where there is a slight deficiency, together with the location of the road, where expensive construction would hardly be undertaken, would no doubt lead any road builder to presume that it was a surface application.

Two interesting studies in road location are afforded in this two miles of road. One illustration shows a relocation which straightens the line of the road and improves the grade. In the foreground is a fill of fifteen feet. The old road took a detour to the left, down hill and up again, to a point where it may be seen in the center background, where the new and the old roads meet. The other study is afforded where the old roadway was followed in preference to a possible straighter line and better grade. A relocation here would have involved the construction of an expensive culvert and a large amount of embankment to be filled from borrowed material. The cut below, showing the steam roller and water wagon, is on a section of this old roadway, as is also cut on page 283, showing the watering cart alone. The extreme right in the background is the point where a relocation might have started, except for the additional expense involved.

The contractor's outfit needed and used on this work, while not so expensive as to shut out bidders of moderate capital, must amount in cost to about one-third of the value of the contract. The plant consists of Acme Road Machinery Company's crushing outfit, a Buffalo-Pitts steam roller, sprinkling cart, water pump, two Wood steam drills, Troy dump wagon, piping and small tools. The contractor is Pietro Giovannini.

The Chief Engineer of the Massachusetts Highway Commission is A. W. Dean, J. H. Joiner is Division Engineer, with headquarters at Pittsfield, and E. H. Smith is the Resident



SUPPLYING ROLLER WITH WATER—ROCK CUT, REDUCING GRADE TO 5.6 PER CENT

WATER RATES IN ST. LOUIS

Committee Recommends Lower Rates—Minimum Rate of Three Cents per Thousand Gallons for Large Users—Rates in Twenty-three Leading Cities

By CHARLES CLAUDE CASEY

A SPECIAL committee appointed a year ago by Mayor Frederick H. Kreismann, of St. Louis, to investigate and report on the feasibility of a reduction in water rates to manufacturers has submitted its report to the Municipal Assembly of that city recommending a minimum rate of 3 cents per 1,000 gallons to large users. As mentioned in an editorial in this paper in April, a number of cities have been considering a reduction in water rates and this proposed action by St. Louis likely will lend a new impetus to the movement.

The rate recommended is believed to be lower than the rate in any large American city at the present time, except Detroit, which now has a 3-cent rate. Figures are submitted by the committee in its report showing the minimum rate in twenty-three leading American cities. The highest rate seems to be in New York, where 13 cents is given as the lowest minimum rate. Chicago and Philadelphia have rates of 4 cents and Mobile has a minimum rate of $3\frac{1}{4}$ cents.

For several years the question of a reduction in water rates has been agitated in St. Louis by the Manufacturers' Association—E. J. Troy, secretary of the association, was a member of the special committee—which has been trying to boost St. Louis as a factory city. The water rate of 8 cents to factories was declared too high, and though new factories were continually being located, the high rate was found to be a handicap.

Water Commissioner Ben C. Adkins, chairman of the committee, found that his revenue for 1910 promised to exceed fixed charges by about \$680,000, based on the old rates, and after studying conditions in other cities—though he found conditions to be different in almost every city—he consented to a reduction in revenue of \$250,000 a year. This would leave about \$430,000 this year for extensions of the system. He would not, however, consent to a reduction which gave manufacturers the whole benefit, and the report goes down the list of meter rates and recommends a cut of from 2 to 3 cents in the rate for each of the various amounts of water used. Also he refused to give manufacturers a flat rate in the reduction, contending that if a general reduction was made they should be satisfied to pay for the water used as other consumers through meters had to pay. Manufacturers have been paying 8 cents straight, regardless of the amount of water used, while other consumers have been paying from 8 to 25 cents, depending on the consumption.

Following are the new rates recommended, with the revenue the old rates are producing, the revenue the new rates are expected to produce, and the water consumed at each rate last year:

Av. Daily Consumption, Ga's.	Present rate per 1,000 gals.	Present revenue produced	Proposed rate per 1,000 gals.	Expected revenue new rate	Water consumption last year.
1,000 or less	.25	\$34,417.50	.22	\$30,287.00	18,356,000
1,000 to 2,500	.20	23,146.50	.18	20,832.00	15,431,000
2,500 to 5,000	.15	19,234.00	.13	16,669.50	17,097,000
5,000 to 10,000	.13	19,446.50	.11	16,454.50	19,945,000
10,000 to 25,000	.11	27,375.00	.09	23,400.00	33,182,000
25,000 or over, and to mfg..	.08	290,833.50	.05	184,000.00	484,722,500
250,000 or over, new rate ....	...	.....	.03	.....	.....
Totals ..		\$414,453.00		\$291,643.00	588,733,500

All the revenue figures are for a half year, revenue being collected in half-year licenses.

The minimum rate for all ordinary consumers of water, there being few consumers who will be able to take advantage of the 3-cent rate, will be 5 cents. This is a reduction from the old 8-cent rate and applies only when 25,000 gallons or more is paid for. In actual practice, however, it will be effective when 14,000 gallons a day or more is used. It has been found in practice that when a consumer takes enough water at 9 cents.

for instance (the new rate under 25,000 gallons), to equal the cost of the minimum water furnished at 5 cents (the new rate over 25,000 gallons), the tendency has been to pay for 25,000 gallons at 5 cents. The balance of the 25,000 gallons was wasted.

After a consumer passes 14,000 gallons a day at 9 cents it is cheaper to waste the remainder of 25,000 gallons and pay for the latter amount at 5 cents. The same applies to the 3-cent rate. If any consumer reaches 150,000 gallons a day at the 5-cent rate, he will be paying as much as he would have to pay for 250,000 gallons at 3 cents. If he uses more than 150,000 gallons a day it would be cheaper for him to turn into the sewer the remainder of the water needed to bring his consumption up to 250,000 gallons.

Foreseeing this waste from past experience, Messrs. Adkins and W. J. Flynn (the latter assessor and collector of water rates and the third member of the special committee) recommend in the report that consumers be allowed to pay for more water than they need, if they want to, to enable them to take advantage of the next lower rate. It is better for the city and the water department—and, of course, the officials see the point or they would not recommend the special privilege—that it receive \$3,750 for 250,000 gallons of water at 3 cents and deliver but 150,000 gallons a day, than it is to receive the same amount of money and have 90,000 to 100,000 gallons a day wasted. The city would be winner to the amount of the cost of pumping the water wasted.

Large amounts of water always have been wasted in St. Louis, and the present consumption probably could be materially reduced under the proposed arrangement. Consumers of 7,000 or 8,000 gallons a day at 13 cents have wasted the remainder of 10,000 gallons to get the 11-cent rate, which meant a saving to them in their annual water bill. The same condition, of course, also exists in other cities, and it is a condition that private companies and gas and electric utility companies have had to contend with.

Following is a statement of water works revenue received from all sources during the last fiscal year ending April 11, together with balances under the proposed new rate:

Fixed Expenses, Last Fiscal Year	
Net operating and maintenance cost.....	\$860,000.00
Assessment and collection of water works revenue....	77,402.00
Interest and Sinking fund expenses.....	476,759.00
Total fixed expenses.....	\$1,414,161.00
Revenue Available	
Total collections, fiscal year 1909-1910.....	\$2,028,443.14
Est. fire connections, \$5 per sq. in. of pipe.....	65,000.00
Estimated revenue for 1910-1911.....	\$2,093,443.14
Deductions by new rate, estimated.....	\$ 248,000
Fixed expenses, estimated.....	1,414,161
Balance for extensions and betterments.....	\$431,282.14

There was an unappropriated balance at the end of the last fiscal year of \$1,258,644.73.

The item referring to a charge of \$5 per square inch of pipe for fire connections is touched upon as a separate proposition in the committee's report. No charge is now being made for fire connections in office buildings, factories or big commercial houses for automatic sprinklers, stand pipes, etc. It is proposed in the new rates to include the \$5 charge for the purpose (aside from the expected revenue of \$65,000 a year) of equalizing the cost of fire protection. Some large factories use very little water and at the old flat rate of 8 cents per 1,000 gallons, without regard to the amount of water used, these factories have actually paid less for fire protection than small residences which pay a flat rate per room. If the change is made all special fire protection will have to be paid for.

Mr. Adkins also recommends that a change be made in the cost of water used by the fire department, which cost at present is covered by a blind charge in the meter and residence rate. He states that a real estate charge collected in connection with the regular city taxes, sufficient to cover the cost to the department of supplying water for fighting fires, would make possible a reduction in rates to house owners equal to the present blind charge, and would effectually equalize the cost of fire protection.

The change would unload upon the big office building and costly downtown property the expense of fire protection which it should bear. The \$10,000 residence should not pay as much for fire protection as the office building worth \$1,000,000. Office buildings are getting a considerable reduction through the revising of the meter rates, which will give them an added advantage unless the fire protection charge is made.

Some interesting information is contained in the data collected by the committee from other cities. Of twenty-two leading cities only four were found to have rates under 5 cents. They are Chicago and Philadelphia, each 4 cents; Detroit, 3 cents, and Mobile, 3¼ cents. Six cities have a minimum rate of 10 cents and over. General revenue tax figures vary as greatly. New York has a tax rate of \$1.77 on the \$100 valuation, against a rate of \$7.66 in Chicago. The difference is partly accounted for in the valuation, New York property being assessed higher per \$100 of real value.

Following are the figures in twenty-three cities, including St. Louis, showing the estimated population, minimum water rate, assessed valuation of property and the tax rate:

City	Estimated population	Minimum water rate	Assessed valuation, taxable property	Tax rate
Detroit	450,000	\$.03	\$359,819,910	\$1.81
Mobile	70,000	.03¼	28,935,307	2.35
Philadelphia	1,545,800	.04	1,358,675,057	1.50
Chicago	2,610,681	.04	477,190,399	7.66
St. Louis	750,000	*.05	560,000,000	2.22
Cleveland	550,000	.05½	256,719,375	3.37
Holyoke, Mass.	56,000	.05%	47,000,000	1.70
Baltimore	650,000	.06	624,482,590	2.16
Buffalo	415,532	.06	307,500,555	1.89
Louisville	290,000	.06	165,000,000	1.75
Dayton	140,000	.06	58,612,090	2.96
St. Joseph, Mo.	130,000	.06	40,000,000	1.30
Grand Rapids	100,000	.06¼	83,528,700	1.94
Kansas City	375,000	*.06%	135,580,492	1.27
Cincinnati	460,000	.08	250,283,550	3.11
Minneapolis	310,000	.08	175,912,389	2.65
Albany	100,000	.08	82,438,325	1.94
Pittsburg	580,000	.10	709,950,718	1.38
New Orleans	375,000	.10	226,581,922	2.80
Los Angeles	325,000	.10	276,751,517	1.47
Rochester	210,000	.10	154,035,695	1.97
Boston	629,478	.10½	1,348,041,627	1.65
New York	4,730,350	.13	7,250,500,559	1.77

* The three-cent rate in St. Louis is to apply only to large consumers. Kansas City also has a special rate of three cents to large consumers.

SAN FRANCISCO'S MUNICIPAL ASPHALT PLANT

THIS plant was constructed by Hetherington and Berner, during 1908, was completed on October 14 of that year, and was described in our issue of November 11, 1908. It had a guaranteed capacity of 4,500 square feet of 2-inch wearing surface per day, and cost \$9,610.90. It was put into operation the latter part of March, 1909, and in a very few weeks had reached an output 20 per cent in excess of its guaranteed capacity. The output in cubic feet during March, April, May and June was 20,756, 40,854, 44,624 and 32,151 cubic feet, respectively. City Engineer Marsden Manson states in his latest annual report that the plant more than paid for itself in these four months in the saving over contract price for street repairs. The strain to which the plant was put resulted in the necessity of making some repairs in June, which, in addition to the fact that longer hauls of material were necessary, accounted for the decreased output that month. The repairs cost about \$250.

The cost per square foot during the four months mentioned ranged from \$.0952 to \$.152 per square foot on Market street, and from \$.0943 to \$.1622 per square foot for work on other streets.

The equipment in addition to the plant proper consisted, at the time of the report, of an 8-ton steam roller, costing \$2,400; a 2½-ton steam roller, costing \$1,200; a fire wagon, costing \$160; asphalt kettle, \$275; rotary pump, \$197.75; tank for hauling asphalt, \$325; oil tank, \$440, and a miscellaneous equipment, such as smoothing irons, rakes, shovels, etc., \$1,963.22.

The amount of work done during the four months consisted of 81,814 cubic feet of wearing surface, the material for which cost \$22,965.34, and 73,376 cubic feet of binder, the material

for which cost \$11,036.16. The cost of labor at the plant was \$7,043.17, and that of power, oil, fuel, etc., was \$1,961.90. This made a total cost of material delivered to the street of \$43,006.57. The cost of labor on the street was \$20,545.35. There were 593,696 square feet of surface laid, making the average cost 10.7 cents per square foot. If the plant be assumed to have a life of 10 years the depreciation during the four months would be \$560.30, and the interest at 6 per cent per annum would be \$336.18. This would make an addition to the cost per square foot of 0.15 cent, making the total cost per square foot 10.85 cents. Work has heretofore been carried on under contract at an average cost to the city of 16.5 cents per square foot laid.

The above figures are from the city report. Since it is doubtful whether the rate of operation mentioned could or would be continued more than six months out of the twelve, the depreciation and interest might well be doubled, making the total cost 11 cents per square foot, or 99 cents a square yard.

BITUMINOUS PAVING NOMENCLATURE

Editor Municipal Journal and Engineer,
239 West Thirty-ninth Street,
New York City.

Dear Sir: In reply to your inquiry as to my ideas on the nomenclature of bituminous paving construction, I will try and add a word to this subject which has been discussed in several numbers of your magazine during the past two months.

The terminology as applied to these constructions is, as may readily be seen from the various letters you have published, very much confused and in many cases poorly used. The term bituminous macadam is generally applied throughout the country to any stone or gravel road in which an oil or bituminous cement has been used as a binding material. Such a use of this term is undoubtedly wrong, and bituminous macadam should only be applied to cases where bituminous-bound roads are built of one or more layers of uniform sized stone. This is the only logical use that can be made of this term, as the word macadam originated with Mr. John Macadam, whose idea of construction was in the use of layers of uniform sized stones.

The term bituminous concrete as applied to road work has been but little used. The only case known by the writer is in connection with the old coal tar pavements of the early seventies. It is evident that the name concrete in this connection was derived from the fact that the tar and stone were mixed together on mixing boards by laborers in a manner similar to the mixing of cement concrete. These old pavements, however, on a close study of them, should really be classed as bituminous macadam, as they are always of more or less uniform sized stone cemented together with coal tar. In my belief, the term bituminous concrete should only be applied to road construction where a bituminous binder is mixed with a stone or gravel graded from coarse to fine, such as is used in a good cement concrete.

It is surely evident from the indiscriminate use of various terms in bituminous road construction that something should be done to bring about a uniform nomenclature of this subject, and I must compliment you for having brought out these discussions, which show so clearly this necessity.

Very truly yours,

A. W. Dow.

ASPHALT IN BERLIN AND ROME

THE American Consular Bureau states that about 45 per cent of the pavements of Berlin, Germany, are of asphalt, 53 per cent of stone, less than 2 per cent of wood, and the rest cement macadam, small stone upon concrete, etc. Government records show that 98,379 metric tons of asphalt were imported into Germany in 1909, of which only 3,754 tons were from the United States; the largest amount, 61,828 tons, having come from Italy.

In Rome asphalt paving, as constructed in this country, is not found, but a thin layer of asphalt mixture is used as a surface binder or dust layer in some cases. Asphalt blocks are used to some extent for paving stables, driveways into buildings, court yards, etc. The almost universal paving material is stone, either in the form of blocks or as cobbles.

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AUGUST 31, 1910.

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Water Rates

In the article on another page, abstracting the report of a St. Louis committee on water rates and a discussion of the subject by Water Commissioner Adkins, attention is called to the difficulty found with the sliding scale of rates in which the rate on the entire consumption is reduced as the amount of consumption increases. As shown there, after the consumption at one rate has passed a certain point it would be cheaper for the consumer to waste a considerable amount of water in order to obtain the advantage of the next lower rate. This difficulty has been realized and overcome in a great many cities by a somewhat different method of adjusting rates, this method being to charge a certain amount for the first 1,000 gallons, a somewhat less amount for the next 1,000 or 2,000 and so on. In this way there is no overlapping of rates and no temptation, or, in fact, invitation, for the consumer to waste water.

If we substitute for the proposed St. Louis rates the following:

First	1,000 gals.....	\$.20
Next	1,000 " .....	.14
Next	2,000 " .....	.10
Next	5,000 " .....	.08
Next	10,000 " .....	.07
Next	150,000 " .....	.045
All over	169,000 " .....	.025

and if we then compare the charges so obtained with the charges resulting from the proposed St. Louis rates, assuming as quantities approximately the mean of the maximum and minimum limits for the St. Louis rates, we obtain the following results:

Quantity	St. Louis proposed rate	Suggested rate
1,800	\$0.324	\$0.312
3,000	0.39	0.44
7,000	0.77	0.78
18,000	1.62	1.57
150,000	7.50	7.535
750,000	22.50	22.915

There is seen to be a very close agreement between the charges obtained by the proposed St. Louis rates and those by the rates suggested by us. The only considerable difference is in that for the 3,000 gallons, and the plotting of a curve with the rates and quantities proposed for St. Louis as co-ordinates shows that the 13-cent rate does not fit in with the curve passing through the others, but should be increased to 14 cents in order to do so. If this rate be used instead of 13 cents, the charge for the 3,000 gallons would be 42 cents, as compared with 44 cents, according to our suggested rate.

With a rate such as we suggest, a consumer would obtain no advantage whatever by wasting water, since each gallon of water used is charged for at a rate which is already fixed and which does not depend upon any amounts which may be used in the future. The calculating of bills might appear to be somewhat more complicated, but with a small slip of paper continually before the clerk it becomes no more difficult—in fact, somewhat easier—than by the other method. For the rates suggested above such a slip would be somewhat as follows:

Gallons	Charge	Rate	Gallons	Charge	Rate
1,000	\$.20	\$.20	9,000	\$1.64	\$.07
2,000 .....	.34	.14	169,000	8.39	.04½
4,000 .....	.54	.10			.02½
9,000 .....	.94	.08			

Thus, for a quantity intermediate between any two appearing on the left-hand column, as, for instance, 4,500, the clerk adds together the amount opposite 4,000 and the charge for 500 gallons at the rate immediate below the 4,000, or 8 cents, giving a total of 54 plus 4 or 58 cents.

There is nothing novel in the above method, but it has been used for a number of years by quite a large proportion of the water works companies and departments of the country, and it seems to us preferable to the method described in the article referred to. The method of calculating charges by use of the table is, however, original with the writer.

Cement Pavements in Syracuse

THE city of Syracuse, N. Y., has adopted standard specifications for the large amounts of cement paving which it lets out by contract each year. These call for a foundation of broken stone, mill cinders or clean, fine gravel thoroughly compacted, on which is to be laid a concrete base mixed 1:3:6, 3 inches thick, covered by a ¾-inch wearing surface composed of 1 part of sand to 1½ of fine stone screenings or coarse sand. The sidewalk is to be laid in separate blocks not greater than 5 by 5 feet, with a distinct line of division from the top to the bottom maintained by means of tar paper or other satisfactory methods; a groove in the wearing surface being located exactly over the joint. As an additional assurance of the use of sufficient cement it is required that not less than one barrel shall be used for each 50 square feet of sidewalk. The sand for the wearing surface is required to be clean and coarse, such as will pass a one-fourth-inch screen, but with the dust and finer materials all screened out. The city obtains a price ordinarily of 9½ to 10 cts. a square foot (85 to 90 cents per square yard); but has had as low as 8 cts. a square foot.

CONCLUSIONS OF BRUSSELS INTERNATIONAL ROAD CONGRESS

Nine General Questions on Proper Character of Roadbeds Answered by Second Convention—Road Structures—Choice of Surfacing Materials—Distribution Systems—Designs of Vehicles

THE Second International Road Congress which met in Brussels, Belgium, during the week beginning August 1 before its adjournment, passed resolutions dealing with the questions which came before it for discussion. The nine topics were on the following subjects: (1) Metalled and Paved Roads; (2) Foundation and Drainage of Roads; (3) Light Railways and Tramways; (4) Cleansing and Watering; (5) Choice of Surfacing Materials; (6) Distribution Systems under Roads; (7) Influence of Weight and Speed of Vehicles on Bridges, etc.; (8) Design of Road Vehicles; (9) Motor Omnibuses.

The fifth question, that regarding the choice of surface materials, aroused considerable divergence of opinion between the American and English engineers on one side and the Continental engineers on the other. The resolutions as passed, in deference to the American and English views, were made more favorable than they would otherwise have been. The Continental engineers would have had the Congress state that as, even when improved by tarring, macadam was not a material which would bear heavy or intense traffic, that it facilitated the production of dust and mud, and that it was costly and troublesome to maintain, it was desirable that it should be abolished on town roads of any importance, and that its use should be limited to suburban quarters and the outskirts of towns, either as a temporary expedient in new quarters where building operations were not fully completed, or for avenues in woods, parks, and so forth.

The resolutions are as follows:

Metalled and Paved Roads

(First Question)

1—Use of Binding Materials in the Construction of Metalled Roads

The Congress believes that it is desirable to pursue and develop the applications of the use of binding materials in the construction of metalled roadways, special attention being given:

- (1) To determine in each case the character of the binder best suited to local conditions.
- (2) To determine as exactly as possible the physical and chemical characteristics to be specified for tar, bituminous, asphaltic or other binders as best suited.
- (3) To compare the different results obtained in various methods of construction.
- (4) To investigate the influence that storing of tarred metal during a more or less extended period, before being used, may have upon the perfection of the work.
- (5) To make a study of the deteriorations that the materials are subjected to during use.
- (6) To specify the system to be advised where ordinary metalling has proved deficient and stone paving cannot for some reason be applied.
- (7) To establish for each district, according to local conditions, and in each case the relation between cost and the result obtained.

2—Use of Trackways in Paved Roads

(a) Apart from exceptional cases depending upon local conditions, the construction of trackways in paved roadways can be considered but an expedient.

3—Progress Made in Combating Wear and Dust

Confirming the resolutions passed at the Paris Congress in 1908, the Congress believes:

- (1) That superficial tarring may be considered as definitely accepted in practice, and that the advantage to be derived from spreading fine sand or suitable stony material after tarring and rolling the same is not at present proved, and should form the object of comparative tests.
- (2) That in the future application of these methods the attention of road builders could be drawn with benefit to the comparison of results obtained by the laying of tar, bituminous or asphaltic substances—hot or cold—by machine or by hand, both from the point of view of cost and from the point of view of the efficiency of the operation.
- (3) That it is desirable, in comparing results, to take into account the quantity of the materials composing the metalling, the intensity of traffic and tonnage, as well as the climate.
- (4) That with due regard to the resources of each region in tar, bituminous or asphaltic substances, it is important to specify in contracts the conditions that are to be fulfilled, especially as regards the preservation of "life"; that is to say, the property of preserving their binding power.
- (5) That it would be desirable that a comparison be established between the advantages of tarring—this word being taken in its broadest sense—in different cases; whether the operations are to be frequently repeated, small doses being applied each time, or whether larger quantities are to be applied at greater intervals. Furthermore, whether, in the metalling itself, a tar, bituminous, or asphaltic binding material has already been incorporated or not.
- (6) That the conclusion adopted by the first Congress is to be maintained in toto, running as follows: emulsions of tar of oil,

hygroscopic salts, etc., have a real but not a lasting efficiency. Therefore their use should be limited to special circumstances, such as on racecourses, and in connection with festivals, processions, etc.

Foundation and Drainage of Roads

(Second Question)

Foundation

(1) The formation and construction of foundations of roadways should be made the stronger in proportion to the lesser compactness of the ground. The foundation should have more body and resistance, the more it is exposed to internal deterioration and external wear.

(2) In the choice of the system of foundation for roadway, both stone sett and metalled, stress should be principally laid on the degree of dryness and dampness of the subsoil, while having regard to the possibility of their drainage and to their geological nature and to the nature of the materials of the locality.

Drainage

(3) In soils where preliminary drainage is required before construction the general methods of drainage should be applied to the whole or to a part of the road body and to the bed of the metal if necessary.

(4) The cross and longitudinal sections of roads and those of side gutters should be established so as to facilitate the flow of the trickling water and to prevent infiltration of water into road surfaces, which should be made as impermeable as possible. The evaporation of superficial dampness should be encouraged by every means.

(5) The works for the foundation and for drainage should be carried out simply and economically, and by using the materials of the country so far as possible.

Light Railways and Tramways

(Third Question)

(1) In the study of new roads to be constructed both in the neighborhood of large towns as well as in the open country it may be useful to try to provide a sufficient road width for the construction of a light railway outside the roadway.

The designs should be of such a kind as to provide for every kind of traffic.

It is desirable that the supplementary costs should be defrayed by the owners of the light railway as far as the part of the road reserved for the rail track is concerned.

(2) The construction of sunken rails in the metalled roadways is always harmful to the viability of roads, and there results a marked increase in cost of the maintenance. It is desirable that this method should be avoided as much as possible.

The presence of tramway rails in paved roads makes the repair of the paving very difficult where the latter abut against the rails. It is necessary to diminish that nuisance as far as possible by appropriate methods.

(3) Where the railway is placed by the side of the road it is preferable, where the width of the road permits, to construct it on a special track, inaccessible to wheeled traffic and super-elevated in order to allow greater safety.

It is necessary in all cases to provide proper drainage.

In the case of metalled roadways, the owners of the railway should be obliged to construct on the outside border of the roadside a depot for materials for the repair of the road; the same obligation should be in some cases extended to paved roads.

(4) The removal of trees along roadsides should not be tolerated unless in special cases.

If the width between the tree rows is insufficient for the rail track to give the necessary width for ordinary wheel traffic the track should be laid on the outside of the trees.

(5) It is desirable that the owners of light railways should assist the work of maintaining the area of the road or roadway occupied by the rails or contiguous to same or pay the costs of this maintenance.

Cleansing and Watering (Fourth Question)

Throwing refuse upon the public roads should be carefully avoided. Such refuse should be removed by the municipality and not by the owners of adjoining property provided the cost of this work is recovered from the latter.

In large towns it is necessary to give special care to cleansing and watering.

Cleansing should be done as rapidly as possible.

Watering must be frequent and limited in amount according to local conditions.

Washing and sweeping should be done as early as possible. Mechanical processes are particularly recommended.

Improvement in the implements should be sought for with a view of ensuring the most complete cleansing with the least inconvenience to the public.

Motor machines can be advantageously used for cleansing and road watering in large towns.

Choice of Surfacing Materials (Fifth Question)

(1) Macadam causes dust and mud, is expensive to maintain, and is suitable in large cities only for streets where the traffic is not very great or heavy.

(2) The experimental work carried out in recent years with macadam improved by using a bituminous or tarry coating or binder must be continued in order to determine the best methods of utilizing this kind of construction under varying conditions, so that this question may be submitted again at the next conference.

(3) Stone pavement has great qualities of resistance and durability. Its maintenance is easy and economical; it produces hardly any dust, and is suitable where there are tramway tracks.

(4) It should be adopted in thoroughfares whenever noise is of little consequence or when wood or asphalt surfaces are not suitable. It should consist of setts regular in shape, durable, but not slippery, wearing evenly, and laid upon a foundation and with close joints.

(5) The Congress desires to see the trials of small sett pavements continued wherever local circumstances and traffic conditions permit.

(6) Wood paving is noiseless; not slippery if kept clean; it stands very heavy traffic. The use of it should be extended even to thoroughfares through which run tramway lines.

(7) The respective advantages of hard and soft wood blocks must be a subject of discussion at a forthcoming Congress.

(8) Asphalt pavements should be recommended owing to their good qualities from the hygienic point of view and their ease of cleansing and of repair. This surfacing is almost noiseless and produces but little dust, but it is unsatisfactory adjacent to tramway rails.

(9) There is opportunity for its use in fashionable thoroughfares where the traffic is not severe, where there are no tramways, and where the grades are very moderate.

(10) Finally, the trials of asphalt flag and block pavements should be continued.

Distribution Systems Under Roads (Sixth Question)

(1) It is desirable to free as far as possible the carriageways from the minor distribution systems of pipes which now encumber them and to leave in them only the large sewers and mains which require little attention.

(2) As far as possible the minor distribution pipes which are connected to the adjoining houses should be doubled and placed on both sides of the street. This doubling is especially recommended for streets with heavy traffic and also for those where the surface rests on a solid foundation.

(3) It is advisable to consider the advantages of placing all distribution systems except gas in subways of suitable dimensions under the footways. In this case great care must be taken to prevent flooding caused by breakage of water pipes.

(4) When the distribution works have been actually placed under the carriageway, the Congress advises that the system of doubling should be applied prudently by taking advantage of the opportunity given by considerable repairs or alterations.

(5) Complete agreement is necessary between all authorities interested in the streets in order to conduct their operations so as to interfere as little as possible with the traffic. It is most desirable that all street works should be under the general direc-

tion of those responsible for maintaining the surface. The work must be carried on as rapidly as possible and so as to reduce the space occupied on the public highway and the obstruction to traffic.

(6) Trees planted in the footways in urban districts should be chosen so as not to inconvenience the frontagers by their leaves nor to interfere by their roots with the distribution systems.

Influence of Weight and Speed of Vehicles on Bridges, Etc. (Seventh Question)

(1) The development of mechanical traffic has not had up to the present the effect of increasing the weight of vehicles generally beyond the limits recognized by regulations and custom in connection with constructional calculations. In any case it is desirable that when existing regulations are revised steps should be taken to test bridges by placing upon them the heaviest probable loads under the most unfavorable conditions and exclusively composed of mechanical vehicles.

(2) Under the present conditions of constructing motor vehicles and building public roads it does not seem possible that the speed of vehicles could have any effects on modern and well-built bridges which have not already been duly taken into account in the usually adopted methods of calculations of strength. It may be advisable, however, when testing new bridges or re-testing bridges to make use of the heaviest motor-driven vehicles permitted to run, and running them at high speed.

(3) The consolidation (solidarization) of the different parts of which bridges are composed aids their capacity to withstand the effect of vehicular traffic.

Design of Road Vehicles (Eighth Question)

A—Animal-Drawn Vehicles

(1) Heavily-loaded vehicles with narrow tires may cause exceptional damage to roads laid down for general traffic.

(2) It is desirable that trials should be taken in hand for the purpose of determining the relation which should exist between the load, the diameter of wheel, and the width of tread, so as to avoid abnormal damage.

B—Mechanically-Drawn Vehicles

(1) Such automobiles as fall under the head of "touring cars" cannot cause abnormal damage to the roads so long as their speed is kept within limits.

(2) Public service automobiles cannot cause appreciable damage to the road provided that the maximum speed does not exceed 25 kilometers per hour; that the maximum axle-load does not reach 4 tons on the heaviest-loaded axle.

(3) Commercial motors need not cause exceptional damage to a well-constructed road provided that the following limits are adhered to:

First type—vehicles in which the axle-load is less than $4\frac{1}{2}$ tons; maximum speed, 16 kilometers per hour.

In the narrow streets in towns and large cities when vibrations of the ground are to be feared, it is possible to minimize the inconvenience by reducing the speed in a suitable degree.

Second type—vehicles in which the maximum axle-loads are between $4\frac{1}{2}$ and 7 tons, and the maximum speed 12 kilometers per hour.

It is desirable that experiments should be taken in hand in order to determine the maximum width of the tires of all automobiles while still insuring that under normal conditions the distribution of the load on the ground should take place over the whole supporting area.

(4) Ribbed or grooved iron tires cause abnormal damage to the road no matter what their width or what load they support.

(5) Vehicles propelled by mechanical power cannot cause extraordinary damage to the curved portions of roads provided that at these points a sufficient super-elevation is given, and that the curved portion is not approached or traversed at an unreasonable speed.

(6) With a view to saving the roads it is desirable that car builders should go carefully into the question of clutches and brakes, so that the skidding of the wheels may be avoided, balance the motors as perfectly as possible, and allow a reasonable raising of the center of gravity.

Motor Omnibuses (Ninth Question)

The Congress is of opinion that public motor omnibus service should be encouraged. As a final resolution the Congress is of opinion it is difficult at the present moment to decide definitely on the respective advantages of the two modes of transport, but that one forms the complement of the other and not the rival, and the adoption of one or the other method largely depends on local conditions.

The progress of motor-omnibus traffic and the extent of the use of this method of transportation is capable of great extension—(a) by the use of wheels fitted with rubber tires; (b) by any progress made in construction.

The number of passengers carried by motor omnibuses should be greater for the town than for the country.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

ROADS AND PAVEMENTS

Sidewalk Spitting and Abuses Forbidden by City Ordinances

Dallas, Tex.—Sidewalk regulations of the city of Dallas, as compiled by the Dallas City Plan and Improvement League for the general information of the public, cover the following matters:

Article No. 129, dealing with sidewalk obstructions, says: "It shall be unlawful for anyone to place any barrel or barrels, box or boxes or wood or other substance on any sidewalk in this city, so as to obstruct the passage along said sidewalk or any part thereof. No one shall have or maintain any fruit stand, huckster stand or other stall on any sidewalk in the city of Dallas."

Article No. 195 limits merchants in the use of sidewalks for display purposes to 12 inches on the inside of the walk.

Article No. 210 forbids any owner, occupant or agent of property abutting on any paved street to allow the accumulation of any kind of trash upon the sidewalk, abutting or adjacent to said premises. A penalty is provided of not less than \$5 nor more than \$25.

Article No. 213 forbids scattering handbills or advertising devices of any description along or upon any street or sidewalk. A penalty is named, not exceeding \$100.

Article No. 214 forbids owners or agents of any lot or lots to allow weeds or grass to grow or remain upon the abutting sidewalk, so as to obstruct the sidewalk or gutters. A penalty of not less than \$10 is provided, each day after notification constituting a separate offense.

Article No. 217 forbids the throwing of banana peelings or peelings of any kind upon the sidewalk. The penalty fixed is not less than \$1, nor more than \$10.

Article No. 218 makes it unlawful for anyone to sweep or deposit on any sidewalk or street of the city any loose paper, filth or trash of any kind.

Article No. 663 requires all gates to be swung so as to open on the inside of the premises or be arranged so as to be self-closing. A penalty of \$50 for each day after notice may be imposed.

Article No. 309 forbids placing any marks or signs by stencils or otherwise upon any sidewalk. The penalty is not less than \$5 nor more than \$25.

An ordinance making it unlawful for any person to spit on any sidewalk or in any public building or hall or on any street car or other public conveyance is recorded in Vol. II, page 214, of the city ordinances, the penalty provided being not more than \$25, nor less than \$2.

Would Oil Streets While Building

Joliet, Ill.—At a meeting of the Highway Commissioners the members gave some time to the question of oiling streets, and it is not improbable that in the course of the winter this question will be discussed among those residing along highways planned to be improved next season. It is the belief of the Commissioners spoken to that the work can be done better and more satisfactorily if the oil preparation is put in with the material when the streets are made. It is believed that if the composition is mixed with the stone when the street is made it will give much better results in the end, and that cost of doing the work will be less than when it is done after the streets have been built. The Commissioners see the benefits of the oiled streets and in all parts of the city and township where this method of treating the surface has been tried has been found satisfactory. The members of the board are willing to do all they can to bring about this improvement, and it is certain there will be a large amount of new streets treated with the oil preparation next season.

Neglect in Maintenance of Old Work Causes Rejection of Bid

Kansas City, Mo.—The low bid of the Cleveland Trinidad Company for laying asphalt pavement on Askew street was recently rejected by the Board of Public Works on account of the alleged failure of the company to maintain the pavement on Nineteenth street in proper condition.

New Orleans Paving Plans

New Orleans, La.—A paving plan that Chairman Frawley has suggested to Mayor Martin Behrman, and which he hopes will be favorably considered, is to devote the surplus revenue of the years which the city is authorized to anticipate to paving a business street above and below Canal street with Belgian block. Say, Peters street; it might be paved from Clouet street to Canal, and then South Peters, to Tchoupitoulas, where the streets connect, and from there Tchoupitoulas to Washington avenue. That would make a fine street in front of the main business part of the city, and the drivers of floats and heavy wagons could be compelled to use that street with their loads and keep off the new-paved asphalt streets. The \$400,000 from one year would pay for the city's part of this work, and when a Belgian block street is once finished it lasts many years. Lafayette and Perdido streets were paved with these blocks in 1894, and the pavement is practically as good now as when it was put down, any deterioration being mainly due to the laying of conduits, etc. In spite of the apparent desirability of that class of streets, strange to say, very little of the material was used after these streets were paved. Brick was tried and abandoned and then asphalt, bitulithic and recently granitoid, but some good block pavement streets, it is argued, would save these fine streets from wear and tear.

Private Sidewalk Contractors Need Watching

Duluth, Minn.—The Board of Public Works has declared war against the private sidewalk contractors who fail to secure permits to do their work. In the future those who do not get permits from the Board will be arrested. The Board claims that they are not doing the "square thing," alleging that they leave the edges of the walk rough; that they fail to fill in where they make excavations or tear up old walks, and that the new pieces are not properly connected with the walk already laid. In addition to that it is stated that they make the walks narrower than ordered by the Council. The city contractors were notified some time ago that neglect of this kind would not be tolerated.

Big Grading Job

Omaha, Neb.—One of the biggest grading jobs ever attacked in Omaha is near completion between Poppleton and Hickory streets and Twenty-fourth and Twenty-seventh streets. More than 100,000 cubic yards of earth will have been removed, at a cost of about \$30,000. The Shull Land Company has been doing the work through two grading outfits, one headed by B. C. Wharton of Fairbury, with 20 teams, and A. H. Milby, with 15 teams. In block 15, which borders on Twenty-ninth street, about five acres of earth 23 feet above grade have been attacked and moved away, a good deal of this being used for filling in block 16, which is low.

Emergency Repair Gangs

Philadelphia, Pa.—Mayor J. E. Reyburn has put into effect his plan for having small street repairs done by an emergency gang, that will respond so speedily to request for repairs that the damage may be patched up before it grows into an expensive undertaking. Recently a request was made to the Highway Bureau to have an opening repaired at Seventh and Chestnut streets, where the pavement became broken. Three hours later the repairs had been made. When the Mayor was asked about the speed with which repairs are being made he admitted that he had a repair gang at work. "We have no authority to do this," said the Mayor, "but we can't wait for Councils to pass an ordinance. The city is losing money by neglected repairs. We would have to send for a contractor, under the old system, and then wait days for him. Now we have the work done at once and will save the city a great sum of money. As soon as Councils reconvene, I will ask for the passage of an ordinance creating an emergency repair gang for the streets."

Ready to Lay Wood Blocks

Philadelphia, Pa.—It was expected that there would be some delay in delivering sufficient quantities of wood blocks to push the repaving of Market street, from Sixteenth to the Schuylkill River, without interruption, but the special inspector for the Department of Public Works, Robert L. Hicks, has received a telegram from the United States Wood Block Preserving Company, at Norfolk, Va., announcing that its plant is ready to proceed with the cutting and treatment of the block, and that there will be no delay. About 25,000 yards of block will be required in the section now under construction. About 57,000 yards of blocks were used in the section from Delaware avenue to Sixteenth street.

Streets of Cities Paved with Gold

Portland, Ore.—Oregon has two cities whose streets are paved with gold, and neither lays claim to being the New Jerusalem, either. Medford and Jacksonville are the towns with the expensive pavements. Sand used in the cement sidewalks of Jacksonville is taken from the tailings of the and not all the gold was extracted from them. The tailings were piled up before the construction of a cyanide plant and not all the gold was extracted from it. The tailings will run \$1 to the ton in free gold. The same material was used in paving the Medford streets. It is estimated that Medford pavements have more than \$30,000 contained in them, exclusive of the cost of these improvements to the municipality.

Oil Sprinkling Test Made on City Street

Syracuse, N. Y.—The first experiment in treating Syracuse streets with oil emulsion to permanently lay the dust was made Aug. 12, under the directions of Arthur R. Thompson, Deputy Commissioner of Public Works. North Geddes street, from West Genesee street to the Lakeside boulevard, and the Lakeside boulevard, from this point to the new boulevard at Hiawatha avenue, is the stretch selected for the experiment. Mr. Thompson said that he believed this stretch of well-traveled thoroughfare would afford a thorough test of the efficacy of the oil for dust-laying purposes. If the practical test proves successful oil will be extensively used here on macadam and dirt streets to the exclusion of daily sprinkling with water.

Wants to Make Federal Government Pave

Tacoma, Wash.—Commissioner Owen Woods, of the Department of Public Works, is at a loss to know how to persuade the United States of America to pave the streets surrounding the new Federal building. The officials to whom he has written tell him that the Federal government claims that it derives no benefit from a pavement or a street as persons who go to it have to go anyway. The Commissioner would be glad to hear the arguments used by any city that has succeeded in getting the government to pay.

Thirty-five Miles of Road Oiled in Oneida County

Utica, N. Y.—If fair weather prevails it is expected that the work of oiling the macadam roads in Oneida County will be complete in about two weeks. There are about 70 miles of completed State highways in this county, and between 35 and 40 miles will be oiled. As it requires 3800 gallons to oil one mile, it will be seen that in the neighborhood of 150,000 gallons will be necessary to oil the roads in this county.

Good Quality Pavement Wanted in Warren

Warren, Pa.—The Town Council passed an ordinance to issue \$40,000 in bonds, to be used in paving streets and sewerage. Twelve blocks will be paved this season, and about the same amount next year. Ten blocks are being done by direct labor, two blocks by contract. The city intends to do all of the paving, by day labor, if the venture proves satisfactory and can be done as cheap as by contract, believing that the quality of the work is better. A foundation of 6 to 8-inch concrete is being placed under all pavements in preference to gravel, the city having tried both foundations. The pavement that has a concrete foundation stands the wear and stands up better. Brick blocks are used on the business street and asphalt block on the residence streets.

SEWERAGE AND SANITATION**Odd Things in Sewer Pipe**

Columbus, Ind.—Street Commissioner Brown is cleaning the sewers of the city with a special machine, and in a sewer in California street he took two and a half wagon loads of sand from one square of sewer pipe. In the same square he found that a tree root had entered the pipe and that smaller roots had branched out until the sewer was practically clogged. The Street Commissioner says that aside from sand he is finding more baseballs than anything else in the sewer.

State Would Enjoin Discharge of Sewage into River

Millville, N. J.—The State Board of Health has instructed the Attorney General to apply for an injunction to restrain the city of Millville from allowing the surplus water from the sewage disposal plant to flow into the Maurice River. After a heavy rain and the river overflows its banks the sewage-disposal plant, which cost the city about \$25,000, refuses to work, and the sewage pollutes the water. Ever since the sewer system was installed several years ago Millville has had law suits galore to fight and thousands of dollars have been spent in litigation. The notice of the latest suit has placed the city fathers in a quandry and they are at a loss to know just how to proceed.

Oil Wagons Must Have Drip Pans

Lexington, Ky.—The Board of Public Works has addressed a communication to the Standard Oil Company and other owners of wagons hauling coal oil on the streets of Lexington, notifying them to put drip pans under the faucets of their tanks to prevent the oil from dripping on the streets. It has been found that coal oil has a tendency to rot asphalt paving, and the communication was sent out after a part of Ashland avenue had to be torn up and replaced, as a result of some coal oil getting on the paving. The damage done Ashland avenue was only slight and was repaired at a small cost. In other large cities, where there is a great deal of asphalt paving, there are city ordinances requiring the oil wagons to be equipped with drip pans to prevent the oil from ruining the streets. An ordinance requiring the drip pan on all oil wagons will be passed by the General Council at once.

Food Inspector Does Good Work

Macon, Ga.—Food Inspector Roland B. Hall, in his monthly report to the Board of Health dealing with the condition of the food stuffs, says there are in the city more than one hundred places where food is sold unprotected by screens. Among them are two bakeries, three fish dealers, six fresh meat dealers, fifteen white restaurants, eighteen colored restaurants and seventy mixed groceries. He also calls attention to the filthy condition of two butcher pens located near the city, and says the proprietors have been ordered to place them in sanitary condition at once, while parties using these slaughter pens have also been notified that at the expiration of ten days, unless conditions are improved and the law complied with, animals butchered therein will not be allowed to be sold in the city.

Health Board Undertakes to Cleanse Creek

Turtle Creek, Pa.—A work unique in the annals of local health bureaus is nearing completion in Turtle Creek, where officials have undertaken the task of dredging a creek and cleaning the entire bed. For years the creek has been used as a dumping place for garbage, ashes, rubbish and other refuse. The bottom is covered by several feet of slimy waste, and the water is thick with impurities. Epidemics of disease have stricken Turtle Creek Borough on several occasions, and physicians blame the filthy condition of the creek for the transmission of diseases. A few days ago a large force of men were employed by the borough to scrape the bed of the stream and remove the mucky deposits. The muck is being hauled away to a dump, remote from the borough, and no more refuse will be thrown into the creek. After the work of dredging is completed the Health Board of Turtle Creek plans to further safeguard the health of the town by placing big deposits of lime in the creek bed along its entire course.

How to Spend \$500 in Mosquito Extermination Work

Norfolk, Va.—Dr. C. P. Westenbecker, of the United States Public Health Service, has written to the Board of Control in reply to its request for advice as to how best to spend \$500 in mosquito extermination work, in part as follows:

In my opinion, the best way to do this is to select some restricted area in the city, make thorough and repeated inspections of it, destroy all breeding places for mosquitoes, and at the same time teach the householders where to look for such breeding places, and how to prevent them. In attempting to reduce the number of mosquitoes in a city situated as Norfolk is, it is absolutely essential to have the co-operation and assistance of individual householders, each of whom must look after conditions on his own premises.

I recommend that a sufficient force of inspectors and gang of laborers be employed, supplied with necessary appliances. This force should make a thorough inspection of the territory to be covered, clearing each premises of grass and weeds; removing all old cans, bottles and other articles capable of holding standing water, in which mosquitoes may breed. A card containing information relative to the habits and breeding places of mosquitoes with instructions how to find and destroy such breeding places should be left with each householder in this territory. It is not practicable to state specifically at this time all the appliances necessary or to give all the details of such work, but for the present I think that two inspectors with two laborers, with shovels, rakes, grass hooks, etc., a barrel of "larvaecide," a spray pump, a 16-foot ladder and a vehicle to transport these articles, will be all that is needed at the present time.

To Fight Mosquitoes

Oroville, Cal.—The next legislature will be asked for an appropriation of \$200,000 to exterminate mosquitoes and flies in California, according to Professor Herms, of the University of California, who has had charge of the anti-mosquito campaign in the foothills of this section. A successful campaign has been carried on in Oroville, Roseville, Auburn and other towns in this section. A mass of data has been secured for submission to the legislature.

Infected Well Caused Typhoid

Schenectady, N. Y.—An infected well in which milking utensils were washed was the cause of a slight epidemic of typhoid fever which has just been checked in Schenectady. A report to this effect has been sent to the State Department of Health by Dr. Charles F. Clowe, health officer of the city. July 25 a case of typhoid fever was discovered in Schenectady. August 3 there were six cases in the city. It was then that Dr. Clowe started to investigate the cause of the spread of the contagion. He discovered that all of the cases of the malady were along the route of a certain milk peddler and consequently he paid a visit to the farm of the man which was some little distance from the city of Schenectady. Dr. Clowe inspected the entire farm of the milk dealer and went over his barn and stables. Everything was in good order and the condition was cleanly. His attention was attracted by one of the farm hands going to a well and washing one of the milk cans into which the milk to be peddled was later poured. Cautioning the man to fill no more cans, Dr. Clowe immediately examined the water of the well and took some of it away with him to analyze. He forbade the well being used until he had determined the character of its water. Tests showed that it was infected with intestinal bacteria. When told of the result of the analysis, the milk dealer readily agreed to close the well and promised that he would no longer use its water. Further investigation which was conducted by Dr. Clowe brought out the fact that several cases of typhoid fever had been traced to the same source during the months of July and August of this year.

Mosquitoes Breed in Catchbasins and Back-Yard Traps

Washington, D. C.—The unusual number of mosquitoes about the city in dry spells of weather, when the natural supposition would be that there would be fewer breeding places than usual, has led to an investigation by Dr. S. O. Howard, Department of Agriculture, and Superintendent of Sewers A. E. Phillips. They have come to the conclusion that the breeding places are catchbasins and the traps placed for drainage purposes in many back yards. Frequent treatment with small quantities of kerosene is the remedy advised. It is also suggested that it might be desirable to abolish the basin feature of storm water inlets.

WATER SUPPLY

To Tax Syracuse Water Conduits

Camillus, N. Y.—The city of Syracuse will make a determined contest in the courts to set aside an assessment of \$400,000 upon the water conduits from Skaneateles Lake, which has been made by the town of Camillus. If this assessment stands it will mean that Syracuse will pay this year one-seventh of all the taxes levied and collected in Camillus and practically all the taxes in one school district.

Carthage Now Supplying Deep Well Water Only

Carthage, Mo.—Secretary W. A. Turner, of the Board of Public Works, has issued a statement to the effect that the municipal water works has recently completed the installation of machinery which now enables it to supply artesian well water exclusively. The wells were sunk to a water bearing sand rock strata between 900 and 1,000 feet below the surface, and the water rises to within 75 feet of the ground. The wells are cased in for a depth of about 400 feet, where an impervious shale rock is found.

All Must Use Water Meters

Cedar Rapids, Ia.—The Board of Trustees of the Water Works has sent out the following notice to every water user in the city:

The Water Department of the city has arranged to equip all water users with meters and thus to discontinue all flat rates. The meter setters employed by the city will push the work as rapidly as possible and within a short time will make the change in your service. As this change is along the line of better service and more equitable rates, it is hoped that you will assist in the work. A letter of the City Solicitor, on the question of the legality of such installation, is enclosed you herewith for your information.

Using Hydraulic Rams for Water Supply

Iola, Kan.—The installation of three hydraulic rams at the Neosho river is receiving the attention of the city administration and engineering department these days. The rams are being placed in the pit at the east end of the dam and are expected to hoist 500,000 gallons of water daily from the river bed into the settling basins. Each has a capacity of 600,000 gallons, but the city will require only 1,500,000 from the three daily. The prime reason for the installation is to minimize the operating cost of the water plant. At present two low-pressure pumps lift the water from the river, but the demand on the power plant is so great that these pumps have to be operated after midnight and at other times when the electric load is off. The pumps are the least efficient of the equipment in the city's plant, according to Commissioner Glynn. The fuel bill for a year necessary to supply them with steam is roughly estimated at something like \$3000, if based on 20-cent gas. The rams operate themselves and after they get to work will entail no cost for operating. The first cost will be about \$3000, but they should pay for themselves annually hereafter, as they are recognized as the cheapest pumping proposition known. Taking off the low pressure pumps will mean plenty of steam for the rest of the power plant.

Will Charge Neighboring City Full Rates

Lockport, N. Y.—The Common Council has taken summary action against the city of North Tonawanda for imposing the heavy assessment of \$40,000 upon the Lockport pumping station and pipe line located within that municipality, when it ordered and directed the Board of Water Commissioners to furnish no more water to that city, except in the event of unusual and extraordinary fires, or until that city installs at its own expense a water meter on this city's 20-inch gate valve and pays to this city the regular water rates paid by all other consumers of water.

Rochester, Ind., Water Supply Pronounced Unsanitary

Rochester, Ind.—The water supply of this city has been pronounced dangerous by State Chemist H. E. Barnard, who analyzed a sample sent in by Mayor Omar B. Smith. Acting on this suggestion the City Council has ordered the water drained from the mill race and the bottom scraped down to a gravel bed. The work is now going on, and a small army of men are stationed along the banks with tubs, in which large numbers of small mouth bass are being placed and later dumped into Manitou lake.

Declares City Can Extend Its Service

Los Angeles, Cal.—In a written opinion which he has rendered the Water Commission at its request, Leslie R. Hewitt, City Attorney, has answered legal questions which are likely to arise in the near future when the city water company will be able to furnish service to outlying sections. Mr. Hewitt holds that the board is required to make extensions as rapidly as practicable without reference to whether private companies are operating in the districts, and that the city may parallel private lines, but is under no obligation to purchase the private plants. He also holds that the private companies would have no claim for damages in such case and gives the opinion that an injunction to restrain the city would not lie. In view of the fact that the city has declared its policy to maintain a water system, and has done so for years, Mr. Hewitt thinks that private companies have been established in view of this fact, and are bound to take notice that the city may at any time supplant them. The question was raised by the Water Board because consumers in the residence districts in the western portion of the city recently annexed, some of whom are now being served by the Union Hollywood Water Company, are dissatisfied and are asking for city service.

Newark City Council to Buy Water Plant

Newark, O.—The City Council has passed an ordinance directing the purchase of the Newark Water Company's plant from H. M. Verrill, of Portland, Me. The purchase price is named at \$100,000. The one form of the agreement is arranged whereby the city lease the two-fifth interests of Mr. Verrill, for a period of five years for a yearly payment of \$12,000 annually with 6 per cent interest, and a payment of \$40,000 besides, and when the same is paid Mr. Verrill is to present a deed for the plant, with all indebtedness paid up. This also means to eliminate the \$25,000 damage case now pending in a case in the common pleas court, which represents damages against the city as filed by the water company. For the past five years the matter of purchasing the old water company's plant has been a matter that has been bitterly contested between factions in the city, and has caused much unpleasantness.

Big Water Main Burst

Philadelphia, Pa.—Great excitement was caused in the vicinity of Fourth and Walnut streets at 5 p. m., Aug. 22, by the bursting of a water main which sent streams of water as high as the house tops and caused a shower of bricks, clay and granite blocks. The break occurred in the middle of Fourth street, about 30 yards below Walnut, and tore a hole in the street extending from the car tracks to the curb for 15 feet. Fortunately no pedestrians were near at the time and nobody was injured. Scores of persons who heard the noise rushed to the scene and the arrival of a number of fire engines and several squads of police added to the excitement. Owing to the break traffic on Fourth street was delayed for several hours.

Dam Flooding Lowlands Increases Capacity of Wells

Springfield, O.—With the driest August since Springfield has been large enough to make the question of water supply a problem, the well at the new pumping station has 12 feet of water in it. Last year at this time it contained but two or three feet, and the Superintendent, George Cotter, was using dynamite to keep up the supply to that extent. The plentiful supply is the result of the expenditure of \$3000, a year ago, in building a dam to throw the water over the lowlands so it could get to the well in dry weather. As the result, Springfield citizens are enjoying plenty of water, with no danger of a shortage, while other cities in the State are living in fear of the breaking out of a big fire, which they realize would be impossible to handle with a limited water supply.

Branch Water Supply Commission Office

Rochester, N. Y.—The State Water Supply Commission has opened a branch office in Rochester with Walter McCulloch, Consulting Engineer, and two assistants, in charge. The engineers are to complete the survey of lands for the proposed storage dam to regulate the flow of the Genesee river.

Operation of New Orleans Purification Plant

New Orleans, La.—Supt. Earl has made the following report regarding water purification in July: "The average amount of water purified in July was 74,080,000 gallons per day on the east side of the river, and 708,000 gallons per day in Algiers. The river water had an average of 575 parts per 1,000,000 of suspended matter, ranging from 425 to 900. One grit and one lime mixing reservoir, and only one of the four coagulating reservoirs have been in service, giving a nominal period of subsidence of 12 hours. The alkalinity of the water averaged 86 parts per 1,000,000, ranging from 77 to 95, and was reduced in effluent to an average of 36; 260,900 pounds of lime and 42,450 pounds of sulphate of iron were used at the Carrollton Plant in treatment, making an average of 4.18 grains of lime and 0.68 grain of iron per gallon. The average length of run of the filters between washes was 180 hours, and the average rate of filtration was 52.7 million gallons per acre for 24 hours. Average turbidity of applied water was 40 parts per 1,000,000. Water required to wash the filters was only 0.5 of 1 per cent of the total water filtered. The average bacteria in the river water was 5500 per c. c., which was reduced in the filter effluent to an average of 22 per c. c., showing 99.6 per cent bacterial efficiency. The above is an especially good showing throughout, and will be very hard to beat in any single item indicating or governing either efficiency or economy."

Water Conduit "Break" Only Blown Out Joint

Syracuse, N. Y.—The first water conduit from Skaneateles Lake was stripped of concrete at the point near Martisco last week, where 30,000 gallons of water had been running away daily for more than a year. Commissioner of Public Works Frank M. Westcott and Superintendent George H. Beebe, of the Bureau of Water, were present and expressed anxiety lest a break in the conduit should be found which would indicate that the cast iron of the first line to the lake was deteriorating. It was discovered, however, that the conduit was intact and that the leakage had been caused by the blowing out of the lead from a joint and the dislocation of 18 inches of the main. When the concrete was stripped away a stream of water spouted 30 feet in the air. The conduit joint was forced back into place and the leak practically checked. Superintendent Beebe said last night that a little work to-day would end the leak, which worried city officials for months during last year's water shortage.

STREET LIGHTING AND POWER

Ornamental Street Illumination in Mt. Vernon and Yonkers

Mt. Vernon, N. Y.—A committee representing the business men of South Fourth avenue, between First and Second streets, visited Yonkers last week to inspect the ornamental illumination recently installed on Main street. A meeting will be held later in the Chamber of Commerce to make plans for a similar system of lighting on South Fourth street.

Proposed Light and Power Rates for Grand Rapids

Grand Rapids, Mich.—The special committee having charge of the matter of the proposed contract with the Grand Rapids Water Power Company have submitted the following revised list of rates to be incorporated in an ordinance and submitted to citizens at an election for approval:

LIGHTING

First 30 hours monthly use of connected load.....8c. per K. W. H.
Second 30 hours monthly use of connected load.....6c. per K. W. H.
All over 60 hours monthly use of connected load.....4c. per K. W. H.

POWER

25 to 75 H. P. Demand

Less than 100 hours monthly use of maximum demand..... 2c.
100 to 200 hours monthly use of maximum demand..... 1½c.
200 to 300 hours monthly use of maximum demand..... 1½c.
Over 300 hours monthly use of maximum demand..... 1½c.

75 to 150 H. P. Demand

Less than 100 hours monthly use of maximum demand..... 1½c.
100 to 200 hours monthly use of maximum demand..... 1½c.
200 to 300 hours monthly use of maximum demand..... 1½c.
Over 300 hours monthly use of maximum demand..... 1½c.

Over 150 H. P.

Less than 100 hours monthly use of maximum demand..... 1½c.
100 to 200 hours monthly use of maximum demand..... 1½c.
200 to 300 hours monthly use of maximum demand..... 1½c.
Over 300 hours monthly use of maximum demand..... 1c.

Wants Further Lamp Trial

Boston, Mass.—Superintendent of Streets Louis K. Rourke desires two years to determine the value of the automatic lighting and extinguishing devices proposed by the Finance Commission for the ten thousand or more gas lamps of Boston. He has made a study of the devices now in operation on many lamps in the city and says that while they are more or less successful, the opportunity has not been such as to demonstrate their effectiveness in the making of a contract for a number of years. He purposes to make the experiment on a larger scale by trying the automatic devices on one thousand lights. The Superintendent has advertised in the City Record for bids, following his suggestion made to the Mayor the other day. The Finance Commission recommended the complete change of system, with the city expending nearly a third of a million dollars for the purchase of poles and fixtures and buying the gas of the Consolidated Company. Mr. Rourke does not see why the city should expend this money if it is possible to secure a better contract under present conditions. Accordingly he has given the gas people another chance to submit figures, for a two-year contract, instead of five, and he holds over them the prospect of the city lighting its streets, parks and alleys with electricity. He has already taken fifteen hundred of the gas lamps in the underground zone of the city proper for a trial with electricity under the contract which the city made with the Edison Company a year ago, and which has four more years to run. By this action he says that he will save \$4300 a year, and as he believes electricity is now as good as gas, equal candlepower considered, for the city streets and much cheaper, the gas companies must meet the Edison figures or be prepared to see the city turn to electricity.

Cleveland to Get Low Gas Rates

Cleveland, O.—Negotiations seeking to couple 75-cent artificial gas and 30-cent natural gas have started between the city and the East Ohio Gas Company. Expert W. D. Marks has reported it costs 73.37 cents to deliver 1000 cubic feet of gas to the consumer, allowing 7½ per cent profit. He recommends a 75-cent gas franchise.

Thousands Admire New Lighting Plan

Syracuse, N. Y.—South Warren street, between Fayette and Jefferson, was crowded with pedestrians Aug. 10, from 8 o'clock until midnight. For five hours it was the most traveled street in Syracuse. Electrical illumination such as had never before been witnessed in this city was the magnet of attraction. There were hundreds of people awaiting the spectacle when the electrical current was turned on shortly before 8 o'clock. One hundred lights attached in clusters of five to twenty ornamental poles flashed forth in brilliancy. Then the crowds thronged through the street and admired the new lights, which were finely set off by the flaming electrical advertising signs in the block. It was said that arrangements had been practically completed for extending the new lighting plan in South Warren street from Fayette to East Washington street.

FIRE AND POLICE

Solve Hose-Washing Problem

Augusta, Ga.—The mechanics of the Fire Department have invented a hose-washing machine. Hitherto, after a fire, it has been the custom to stretch the hose out on the floor and go over it with broom and water. Six one-inch pipes were arranged in a circle of about 18 inches in diameter. The pipes were perforated so as to throw fine streams toward a common center. Then a table on wheels to carry the hose through the washer was built. The apparatus works satisfactorily.

Hartford Has Drill Tower for Firemen

Hartford, Conn.—The work of erecting the drill tower for the Fire Department at Colt's meadows is completed, and within a short time the men will be taken there and trained under the competent direction of Drill Master John C. Moran. The tower is 80 feet high and 15 feet square. Its height is the equivalent of seven stories.

For Better Fire Protection

Boston, Mass.—In reply to the Mayor's request for his ideas as to amendments in the building laws to secure better protection in case of fire, Building Commissioner Everett suggests six changes as follows:

1. Extend the building limits to embrace areas fast filling up with inflammable structures.
2. Provide for more frequent fire walls in second and third-class buildings.
3. Limit the areas which may be used for storage of lumber; surround such areas by fire walls, and, if possible, devise some means to prevent live embers flying in case of fire.
4. More general requirement for sprinkler systems.
5. Forbid the maintenance of all signs and other structures of inflammable materials within building limits.
6. On or before 1915 remove all wooden buildings within the building limits.

Automobile Nuisance at Fires

Evansville, Ind.—War on the automobile fire fan has been begun by Mayor Heilman and Chief of Police Covey. Firemen's lives are being hazarded at every fire which occurs early at night, the Mayor declared, by dozens of machines which throw blinding searchlights in the path of the engines and on the firemen as they fight the blaze. Lines of hose are broken by machines passing over them when the water is shooting through at an enormous pressure. Firemen, blinded by the bull's eyes of the auto lanterns, have had narrow escapes from live wires. Several crews have narrowly escaped wrecks on the way to fires. Hose wagons have found the streets blocked by automobiles two blocks from the fire and have had to thread their way slowly the rest of the distance. Police bicyclists and an autocycle officer will be sent to the early night fires, on the recommendation of Mayor Heilman.

Fireproof Partitions Required in Buildings

Houston, Tex.—Better fire protection for Houston and a consequent lowering of the key rate is the object of an ordinance passed at last week's Council meeting. The ordinance applies to all buildings not more than three stories in height and requires that in all such the inside partitions shall be of fireproof or semi-fireproof construction. The ordinance is as follows:

"That hereafter all inside partitions to be erected in new buildings or in repairing old buildings, not more than three stories in height, located within the fire limits of the city of Houston, shall be of fireproof or semi-fireproof construction throughout, except dwarf partitions, which shall not be over eight feet high. By semi-fireproof construction is meant two-inch studding with wire lath and plaster."

Fire Alarm Betterments Save Money

Houston, Tex.—City Electrician Clarence George is working on the new switchboard for the central station, which is to double the efficiency and capacity of the fire alarm system. The new board is 15 feet long and 8 feet high, and is made of Italian marble, while the appliances are of the most modern make. The board itself and all equipment and appliances were made by the Gamewell Fire Alarm Company, and have only recently been received by the city. It will not replace the old board, but will supplement it, and the two will be known as switchboards Nos. 1 and 2. They will be placed side by side upstairs over the central fire station, and as soon as No. 2 is in place and the Southwestern Telegraph & Telephone Company has enlarged its underground duct system sufficiently, there is something more than five miles of cable on hand which the city will begin stringing underground as rapidly as possible. Pedestals will then be placed on the principal corners of the streets in the business part of the city and fire alarm boxes, police call boxes and street lights mounted above them will be put in place.

The present fire alarm system of the city is the best and most efficient of any in Texas, and with the proposed enlargement and improvement of the service it will be as efficient as any in the South. It will also entitle the city to a very respectable credit or deduction from the key rate and will lower the specific rates charged for all insurance throughout the city. It will save thousands of dollars in cost of insurance to citizens and in this respect will soon pay for itself.

New Police Signal System

Fargo, N. D.—The new police signal system has arrived and will be installed immediately. The system consists of ten telephones and a miniature switchboard. The 'phones are to be distributed on the different "beats" and the switchboard rests in the Chief's office. The patrolmen are required to telephone headquarters every half hour and between this time, if the chief wants in communication with any of his men, he switches on a red light and this can be distinguished many blocks away. When a policeman telephones to the station the time, day and year, is registered mechanically on a tape.

Quaker City to Start High-Pressure Service

Philadelphia, Pa.—Preparations are being made to inaugurate the new high-pressure fire service in Kensington on Sept. 1. The machinery is installed at Seventh street and Lehigh avenue, and the storage reservoir has been remodeled. The distributing high-pressure mains are now being given the final tests.

Police Auto Is White Elephant

Portland, Ore.—A year ago, after many appeals had been made to the City Council for money to purchase an automobile for the Police Department, authority was given the Executive Board to use \$1500 for that purpose. A second-hand machine was purchased at what was supposed to be a bargain and for ten days it was operated without serious inconvenience to the public or cost to the city. The eleventh day, however, proved to be the beginning of a series of mishaps that has kept the machine in the garage most of the time. For two months it was completely out of commission, and for at least 10 days in every month it has been taken out of service while its battered engine and crumbling wheels were patched up. For all this repair work the city has been paying. Not a month has passed without a bill from the garage for enormous sums, which have been paid from the funds set apart for the police. During the first month the machine was used, August, 1909, the bill for repairs, exclusive of that for storage, amounted to \$103.93. Since then the repair bills have averaged over \$100 every month, making a total of \$1238.93 that the city has paid on its \$1500 machine in one year. The books of the Police Department show the following amounts: August, \$103.93; September, \$197.95; October, \$60.90; November, \$126.31; December, \$159.08; January, \$14.25; February, \$41.35; March, \$142.95; April, \$6.25; May, \$13.66; June, \$263.95, and July, \$108.35. To this total of \$1238.93 must be added the policeman's salary who has been detailed as a chauffeur, \$1200, and \$250 that has been paid for storage, making a total of \$2699.93, which has been paid for the operation of the machine, which has been in actual service, after the days during which it was disabled are deducted, less than six months.

May Have Fire Marshal

East Syracuse, N. Y.—The supposed incendiary fire at the old-time Riley Hotel has set the taxpayers thinking and now a large number are about to sign a petition asking the village trustee to appoint a Fire Marshal.

Board Indicating Apparatus in Use

Spokane, Wash.—Fireman A. C. Reub has perfected a registering board for all the apparatus used for fires in this city. The board will be installed immediately without expense to the city. The purpose of the registering board is to save the trouble of central station men telephoning to all other stations to find out what apparatus is answering a fire call. By the new method a red light will show on the board at central station, indicating the apparatus that has responded. Fire Chief A. H. Meyers has expressed his approval of the installation of the board. This is the only city known to have this system in use.

Building Temporary Stalls in New Fire House

Waterbury, Conn.—Chief Clark has been agitating the question of buying a combination hose, chemical and ladder auto, and he has visited nearly every city and town within a radius of 200 miles where auto fire fighting machines are used. While stalls are to be built in the new fire house on Maple street they are to be but temporary affairs and will be built on top of the cement flooring, in order that the floor will be uniform when the time comes to abolish the use of horses.

Unauthorized Use of Motor Vehicles Increases Felonies

Syracuse, N. Y.—Chief of Police Joseph M. Quigley has submitted to Commissioner of Public Safety Charles S. Owen a report of the activities of the Police Department for the first six months of 1910. The report also includes, for purposes of comparison, a statement of the proceedings of the Police Department for the same period in 1909. In an introduction to the report Chief Quigley calls attention to the fact that the number of arrests in the first six months of the present year is 121 less than in the corresponding period for last year, while the number of other services performed by the police officers is larger by 17,829. In 1910 7 per cent of the arrests were for felonies and 93 per cent for misdemeanors; in 1909 5 per cent were for felonies and 95 per cent were for misdemeanors. The reason for the increase in the number of felonies is found by the Chief in the violation of the law relating to the unauthorized use of motor vehicles.

Police and Fire Inspection

Waterbury, Conn.—Arrangements have been made for a combination of the annual inspections of the Police and Fire Departments at the meeting of the Board of Safety. It will be held at 10 o'clock a. m., Sept. 15, the day of the State Firemen's Convention in Waterbury, and will be in every way a notable event. The men will pass in review before a temporary stand erected in front of the city hall, and will be inspected by the heads of the Police and Fire Departments, the Board of Safety and the members of the other city boards and city officials. Commissioner Charles A. Templeton suggested that the regular policemen be equipped with their new blue caps and that the members of the supernumerary force wear helmets, as they have not yet been provided with the caps. The supernumeraries will carry their night sticks and the regulars their regular day sticks.

GOVERNMENT AND FINANCE

Forbids City Employees to Accept Street Car Passes

Baltimore, Md.—Mayor J. Barry Mahool has issued an order forbidding any municipal employee from accepting a pass on the cars of the United Railways and Electric Company. The Mayor said he would tolerate no violations and would prefer charges against anyone not obeying it.

Duncan Adopts Commission Plan

Duncan, Okla.—By a vote of two to one the citizens have adopted the commission form of government. The charter calls for three commissioners to be elected at large, all other offices being appointive or may be left vacant at the will of the commissioners. It is expected that the election for the coming week to name the commissioners will be non-partisan. Duncan claims the distinction of being the smallest city in the country to adopt this form.

Commission Plan Adopted at Fort Dodge

Ft. Dodge, Ia.—By a vote of 420 to 340 the commission plan of city government was carried at an election Aug. 16.

Commission Form of Government in Gadsden

Gadsden, Ala.—By a vote of 395 to 83 Democrats of Gadsden went on record as in favor of the commission form of municipal government. Gadsden is the third Alabama town to approve of city management.

Haverhill Commission Dislikes Publicity

Haverhill, Mass.—Regarding a contract for some granite steps regarding which there was a difference of opinion among the members, the Commission maintained an attitude of anti-publicity and instructions to this effect were given to the clerk of the Commission, but Mayor Moulton declared that the Commission was a public body and that its actions should be known to the people of the city whose money has been entrusted to the Commission, and he added that he would give out all the information in his possession that the public might know what was going on, despite the wishes of members who seek to avoid publicity in the Commission's public affairs.

Commission Increases Cost of Government

Tacoma, Wash.—Unlike the city of Des Moines, Ia., which saved \$100,000 during the first year of its commission form of government, the city of Tacoma in the first three months of its trial of the commission system has exceeded the disbursements of the corresponding quarter of 1909 by \$130,000. About the only new work started since the new form of government succeeded the old is the Green River gravity plant. But few have been placed in the field on this work and the added expense has not been large. The following table shows the operating expenses during the months of May, June and July:

	1910.	1909.
May	\$247,000.40	\$240,511.31
June	273,955.16	245,996.26
July	311,931.22	213,615.55
Totals	\$832,886.78	\$700,123.12

This shows a difference in the net cost of the old and the new form of government of \$132,763.66 in favor of the old system. The old Council set aside \$50,000 as a starter, but the expenses of the Fire Department have practically wiped out this nest egg. None deny but that the city has grown during the past 12 months. The old City Council made provision for larger expenses and bigger receipts were counted upon. The friends of the commission plan of city government believed the new administration would be able to cut down the operating expenses, it being urged that five harmonious members of the commission could do more than 16 councilmen, each working for a locality.

Move Made for Uniform Accounting

Trenton, N. J.—The State Board of Public Utility Commissioners took the first step last week to bring about a uniform system of accounting by the street railway companies of the State when, in response to special notices sent out, it conducted a conference of representatives of the companies. The meeting was called under section 5 of the public utility law, which provides that every public utility shall keep its books and accounts so as to accord an intelligent understanding of the conduct of its business, and to that end the commission is given power to require every such public utility of the same class to adopt a uniform system of accounting.

STREET CLEANING AND REFUSE DISPOSAL

New Garbage Crematory Must Lie Idle

Topeka, Kan.—Topeka's new garbage crematory, just erected by Lewis & Kitchen, at a cost of about \$20,000 to the taxpayers, will lie idle at the foot of Jackson street until next year. The old Mayor and Council form of government didn't provide for sufficient funds to operate the plant and as the commission form of government cannot spend more money than it has on hand there is no way by which the city can obtain the money to start the crematory machinery. The garbage plant, which is considered one of the best, most complete and most modern in this part of the country, will be completed and ready for use next week. It has a capacity of burning 40 tons of garbage a day and the people of the city have plenty of garbage on hand to burn.

Keeping Warren Clean

Warren, Pa.—The City Council has made a contract to have the paved streets flushed with a St. Louis flusher, two or three times a week, including the removal of rubbish, for \$50 a week. The water company furnishes the water free. The same contractor has also been employed to collect garbage and burn it in a furnace which he will build. Collections will be made in tight iron wagons. The Civic Improvement League recently had a general cleaning day. They have furnished waste cans labeled "Help Keep Warren Clean," and distributed them along the streets.

New Castle Cleans Up

New Castle, Ind.—Responding to an appeal of the City Board of Health, Aug. 20 was made a general cleaning day. As a result 1800 loads of refuse were collected and sent to the crematory.

RAPID TRANSIT

Traction Action Muddled

Chicago, Ill.—Whether or not the passage of the consolidated traction ordinance must be deferred to the next regular session of the City Council, on Oct. 3, and the prospective advantages of early improvements of the car lines lost through failure to act, was a question that had not been finally settled by advisers of the city. The question grew out of unexpected objections voiced at a special meeting of the Council. It may be found that the resolution adopted before adjournment for the summer vacation relative to action on the car measure at a special session will make possible procedure with the ordinance. Some contend, however, that the record was not clear inasmuch as the final motion to adjourn set the next "regular" meeting for Oct. 3 instead of "subject to the call of the Mayor."

Want Double Trolley System

Milwaukee, Wis.—An attempt may be made by the Common Council, through the City Attorney, to compel the Milwaukee Electric Railway and Light Company to operate cars on the double trolley system to prevent electrolysis to water pipes and conduits. At the same time the City Attorney may be instructed to begin action to collect from the street car company sums of money, to be determined, for the alleged damages to city conduits through the process of electrolysis. The resolution which was drafted in the City Attorney's office was presented to the Council by Alderman Koch, chairman of the Committee on Railroads, and will be considered when that committee meets.

Pittsburg Street Railway Controversy

Pittsburg, Pa.—Mayor Magee has decided that he would do nothing during the day in the direction of enforcing the ordinance revoking the franchise of the Pittsburg & East Liberty Passenger Railway Company, a subsidiary company of the Pittsburg Railways Company, and the ordinance regulating the number of passengers that may be carried in a car. The fact that the courts are not taking up important litigation at this time is responsible for the decision to delay the enforcement of the ordinances. The city administration feels that the suits that will undoubtedly follow enforcement of the ordinances will be of such importance that any court will want a full bench to try them. It will not be possible to have a full bench until the vacation season is over. When the Mayor orders the police to stop one or more cars on the streets covered by the franchise revoked, as he is expected to do, the Pittsburg Railways Company will probably apply at once for an injunction. The same action will, presumably, be taken by the company when the city attempts to compel the company to limit the number of passengers allowed to board a car.

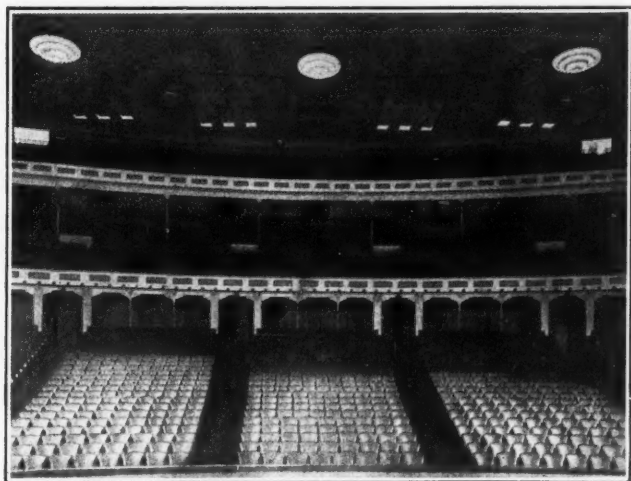
McKinley Bridge to Open October 1

St. Louis, Mo.—It has been officially announced by H. E. Chubbuck, of Peoria, Ill., general manager of the McKinley interurban lines, that the McKinley Bridge at St. Louis will be opened for through traffic Oct. 1. The contractors are making the utmost effort to have one track at the service of the company at that time. The forces on the work have been doubled. The last span will be in place within three weeks, and the track will be in service a few days thereafter. The company is planning an opening celebration, with the governors of Missouri and Illinois, the mayors of cities benefited by the completion of this portion of the interurban system and officials of the company in attendance. A large passenger station at Broadway and Salisbury street is near completion. The station will contain a restaurant and other conveniences. A train caller will announce the arrival and departure of the cars. Through cars will run hourly to all interurban points, while a ten-minute schedule will be in effect to points nearer St. Louis. Large, spacious pay-as-you-enter cars of the latest construction are being built by a St. Louis car company for the local service. The company expects to bridge the gap between Streator and Bloomington within the next 18 months, giving service from St. Louis to Chicago.

MISCELLANEOUS

Denver Auditorium's Third Year

Denver, Col.—Since it was formally opened by the Democratic National Convention, in July, 1908, the Denver Auditorium has accommodated a score or more of large conventions, two seasons of band concerts free to the public have been conducted by the city; numerous entertainments free to the school children have been given and a municipal theatre has been operated. This year the theatre



INTERIOR OF DENVER MUNICIPAL AUDITORIUM

will be rented instead of run on a percentage basis, as heretofore, the price being \$800 a week. The city retains the use of the building on Sundays, also the week before Christmas and Holy Week. The seating capacity of the auditorium is 12,000 and the theatre 3300. The winter concerts, when the entire building is used, usually attract crowds of from 8000 to 10,000. The receipts of the auditorium for the seven months of 1910 were \$16,416, and the operating expenses \$12,421.

City Plan for Des Moines

Des Moines, Ia.—Drawings showing the proposed treatment and beautification of the State Capital grounds by building about them a park and boulevard system will be a feature of the municipal exhibit of Des Moines at the Iowa State Fair. Ray F. Weirick, City Landscape Architect, is making the drawings under the direction of Wesley Ash, Superintendent of Parks. They will be completed this week. The plans of Mr. Weirick call for the establishment about the State House of a park system by buying up adjacent property for this purpose. Then, through these parks he proposes beautiful boulevards and drives which will give a commanding view of the State Buildings and the East and West Des Moines business districts. These plans to beautify Capitol Hill are a part of the comprehensive park and boulevard system laid out for Des Moines by Mr. Weirick. The carrying out of these plans would be one of the important steps in the beautification of East Des Moines. Mr. Weirick proposes that the State Capitol grounds serve as the axis for the park and boulevard system on that side of the Des Moines river. His plans are to have all the boulevards and driveways radiate from the State House. These driveways he would connect with those leading into other portions of the city, providing a chain boulevard system. The drawing now being made shows a park on both the east and west sides of the State Capitol, the Soldiers and Sailors' Monument, now located south of the State House, is shown on the river front, opposite the City Library, and the property surrounding the State Historical Building is devoted to park purposes.

Rest for City Workers

Pittsburg, Pa.—Select Councilman Charles N. Isler declares that the man who swings the pick and shovel for the city is entitled to a vacation as much as any other employee. He says that he intends to introduce in Councils an ordinance providing for a vacation of two weeks each year, with pay, for every employee.

To Assist Blind People in Crossing Streets

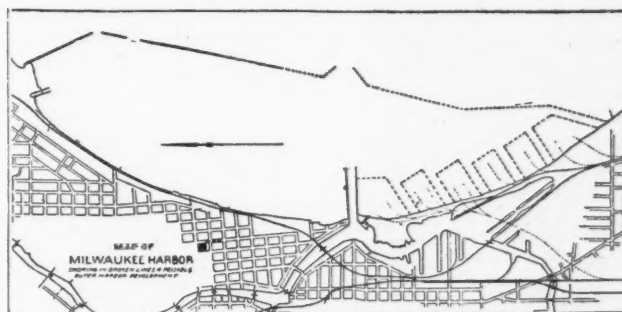
Chicago, Ill.—Whistles of official design which blind people can use in signaling policemen to help them across congested streets will soon be furnished every sightless person in Chicago. Chief of Police Steward has approved the plan and expects the traffic squad to recognize the whistles. A blast from one of the whistles, which will be different in sound from the regular traffic whistle used by patrolmen, will be a signal to crossing policemen to assist a blind person across a crowded thoroughfare.

Municipal Bureau of Reference Opened in Los Angeles

Los Angeles, Cal.—A municipal reference bureau, the first on the Pacific Coast, will be opened at 618 New High street about Sept. 15. It is planned by Dana W. Bartlett, and under its direction three conferences will be held the coming year to aid in civic betterment. It will also be made the center of the "Los Angeles 1915 movement," to make the most of the opening of the Panama canal for Los Angeles and the Southwest generally. At the headquarters of the bureau will be established a free reference library and reading room with books, pamphlets, maps, pictures, charts and other publications relating to municipal betterment. The library will be placed at the special disposal of students of municipal problems, members of city governments, college and high school students, and any others interested in what has been accomplished in other cities. The first conference—a city planning conference—will be held three days in November. Many cities and towns in the Southwest will send delegates.

Milwaukee's New Harbor

Milwaukee, Wis.—That Milwaukee has advantages far superior to Chicago as a harbor city, which could be taken advantage of at the earliest possible moment, is the opinion of Alderman Bogk, chairman of the Council special com-



CONTEMPLATED IMPROVEMENT TO MILWAUKEE HARBOR

mittee intrusted with carrying out the proposed \$4,000,000 harbor project. Chairman Bogk points out that Milwaukee had what Chicago must create at the expense of thousands of dollars, and that it was certain that the local harbor when completed will be the best on the great lakes.

Argument for City Lodging Houses

Philadelphia, Pa.—Receiving no encouragement from Mayor J. E. Reyburn in the move to have unoccupied city property opened for the use of the unemployed and homeless, a second letter has reached him from John N. Landberg, counsel for the International Brotherhood Welfare Association and Committee of the Unemployed. James Eads How, the national chairman, likewise failed to interest the Mayor in the movement. The second letter to the Mayor suggests that he has not had the object of the movement properly presented before him, adding:

As a direct result of Dr. How's agitation municipal lodging houses have been established, first, in St. Louis, and later in Chicago, and the usefulness of these needed institutions has been demonstrated, first, in the conservation of the strength of the homeless unemployed, who, otherwise, sleep here and there, in squares and public places about the city, which mode of life undermines their health, rendering them utterly unfit for almost any kind of work when they get it. Secondly, in the diminution of crime, with the resultant congestion of prisons, since, in the absence of a municipal lodging house homeless men arrested for vagrancy are incarcerated in the county prison, which has a pernicious tendency of making criminals out of decent, but poor, fellows. Thirdly, in that a great many worthy citizens will no longer lose their franchise by being compelled to wander about from place to place.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Judgment Against Municipality—Enforcement

Town of Jonestown vs. Ganong.—Code 1906, authorizing the mayor and board of aldermen to appropriate money and provide for the current expenses of the municipality, and providing that an indebtedness shall not be incurred or a warrant drawn on the treasurer in payment of any indebtedness in excess of the funds on hand, applies to voluntary municipal action, but does not limit the compulsory power of the court to make effective its judgment against a municipality, and the court may compel a municipality to pay a judgment against it. In mandamus to compel a town to pay a judgment which the petitioner had obtained against it, the officers of the town as such are parties, and the clerk thereof is a party, so that the judgment ordered in mandamus operates on him.—Supreme Court of Mississippi, 52 S. R., 692.

Liability of Street Commission

Scott v. Village of Saratoga Springs.—Laws 1902, provides for the appointment of Sewer, Water and Street Commissioners of a village, who shall constitute the commissioners of highways, and have exclusive power to lay out, alter, or discontinue any street, and exercise the same powers as commissioners of highways of towns, and that it should be their duty to maintain the streets, and makes their power exclusive, and gives them control of the moneys raised for street purposes, and makes the commissioners a body corporate, and provides that "all actions or proceedings authorized by this act shall be brought by the said commissioners, and all actions or proceedings on account of any act done or omitted by the said commissioners shall be brought against the said commissioners in their name of the sewer, water and street commission" of said village; and the act authorized them to compromise and pay any claims on account of any act done or omitted by them. Held, that an action for injuries received by reason of a defective sidewalk in the village cannot be maintained against the village, but must be brought against the commissioners.—Court of Appeals of New York, 92 N. E. R., 393.

Defective Streets—Admissibility of Evidence

Mayor, Etc., of City of Birmingham v. Pool.—Where, in an action for injuries to a traveler on a defective street, a witness testified that he called up the Street Commissioner's office and requested them over the telephone to remedy the defect several days prior to the accident, and that the person answering the telephone replied that it would be attended to, and the Street Commissioner denied obtaining the information and making the promise, it was competent to show that a telephone was kept in the commissioner's office, that similar complaints were usually received over the telephone, and that a person in the office had authority to receive complaints during the absence of the commissioner.—Supreme Court of Alabama, 52 S. R., 937.

Defects Caused by City—Notice Unnecessary

Updike v. City of Omaha.—Section 207 of the act governing cities of the metropolitan class, requiring written notice of defective public ways or sidewalks thereof to be filed with the clerk five days before the occurrence of the injury complained of, has no application to defects caused by the city itself in negligently constructing a sewer in one of the streets of the city.—Supreme Court of Nebraska, 127 N. W. R., 229.

Street Railway Franchises—Liquidated Damages

Whitcomb v. City of Houston.—A deposit of \$2,500 with a city under a street railway franchise to be forfeited as liquidated damages on the grantees' failure to have cars in operation and the road completed within specified times, etc., is properly retained by the city as damages on failure to construct the road.—Court of Civil Appeals of Texas, 130 S. W. R., 215.

Street Openings—Due Process

Erie R. Co. et al. v. Mayor and Aldermen of City of Paterson.—Proceedings to open a street impose an additional burden on the land, and are judicial in character, and the landowner is entitled to be heard.

When a landowner is entitled to be heard before his lands are subjected to the burden of a public improvement, it is not enough that he is given an opportunity to file written objections. He is entitled to support his objections by argument and proof. Where the rules of a public body require action at two regular meetings, and fix the days for regular meetings, action had on a day not so fixed is nugatory, where the proceedings are judicial in character, although all the members of the board have previously agreed to meet on the latter day. Such meeting is not a "regular meeting."—Court of Errors and Appeals of New Jersey, 76 A. R., 1065.

Title and Object of Statutes—Bridges

Chambers v. City of Grand Ledge et al.—Act March 27, 1893, an act to incorporate a city, by reason of sections 1, 3, providing that a bridge therein shall be maintained, and rebuilt when necessary, by a certain township and said city jointly, in the ratio of their assessed valuations, embraces an object other than that indicated in the title, so that such provision is without force.—Supreme Court of Michigan, 127 N. W. R., 383.

Snow and Ice—Failure to Remove

Townsend v. City of Butte.—A city is liable for injuries occasioned by its failure to remove from a sidewalk under its control snow and ice which have accumulated and formed a smooth, slippery, and slanting surface over which it is dangerous for pedestrians to travel, where such condition is permitted to remain for an unreasonable time after the city has actual or constructive notice thereof.—Supreme Court of Montana, 109 P. R., 969.

Ordinances—Judicial Power

Broad v. City of Spokane et al.—The expediency of municipal ordinances, the motives inducing their enactment, or the regularity of the enacting proceedings are not subject to review by a court of equity; inquiry being limited to the question of power. A city could abandon sewer improvement proceedings after return of the special assessment roll, though resulting in a breach of contract with one contracting to construct the improvement; his remedy, if any, being suit for damages. In a suit by a contractor to enjoin abandonment of sewer improvement proceedings, whether there was breach of the contract or a remedy for its breach should not be determined.—Supreme Court of Washington, 109 P. R., 1014.

Crosswalks—Snow and Ice

Comstock v. Village of Schuylerville.—Where a crosswalk was located at the foot of a steep descent of a cross-street over which water must necessarily flow in case of rain or thaw, the city was only bound to use reasonable care to keep the walk clear of ice under all the surrounding circumstances.—New York Supreme Court, 124 N. Y. S., 92.

Change of Grade—Right to Damages

Alton v. City of Columbia.—A dedicatory and his assigns impliedly assent to such improvements as will put a street in condition for safe and reasonably convenient use on or near the natural surface, and cannot recover consequential damages for an established grade not materially changing the grade from the natural surface. It cannot be said as matter of law that a cutting down of one foot in the center of a sidewalk next to a lot is not a material change of grade from the natural surface, entitling the owner of the lot to damages.—Kansas City Court of Appeals, 129 S. W. R., 980.

Defective Sidewalk—Coal-Hole Cover

Keating v. City of Boston.—A jury is warranted in finding that a coal-hole cover which when stepped upon will tip up unless fastened is so likely to be unfastened, that a city which used reasonable diligence after it had, or in the exercise of proper care might have had, notice of this condition would not allow it to be there at all.—Supreme Judicial Court of Massachusetts, 92 N. E. R., 431.

NEWS OF THE SOCIETIES

International Association of Fire Engineers—The thirty-eighth annual convention was called to order at the Court House, Syracuse, N. Y., Tuesday, August 23, with more than 400 delegates and guests in attendance. The delegates assembled at the Onondaga Hotel and marched in a body to the Court House. William Rubin, in behalf of Mayor Edward Schoeneck, delivered the address of welcome, and Chief George W. Horton, president of the association, spoke in response. In the evening a memorial service was held in the Court House. Wednesday was given up to exhibitions by the manufacturers of fire-fighting apparatus and a drill by the Syracuse pompier life-saving corps. The first event of the morning was a parade by a battalion of Syracuse firemen led by Assistant Chief Ryan. The pompier corps gave an exhibition at the State armory. Members scaled to the top of the Senbert building, six stories high, and came down again. A life line was shot to the top of the building and some of the men came down the rope in different positions, one man with bare hands. A ladder-raising exhibition was held at the armory. Ladders varying from 55 to 65 feet were raised in quick time, the fastest being 13 2/5 seconds. One of the ladders picked a man off the sidewalk and landed him on top of the extension ladder in 17 1/5 seconds. An exhibition with life nets was given, a boy jumping from the end of the ladder. In the afternoon tests were made with automobile fire engines. A big Webb auto fire engine threw streams of water to the top of the Soldiers' and Sailors' Monument from a point on the opposite bank.

The technical papers and discussions as announced in the program were carried out on Thursday and Friday.

The election of officers resulted as follows: President, Chief John Thompson, Toronto, Ontario, Can.; First Vice-President, Chief William H. Loller, Youngstown, O.; Second Vice-President, Chief H. F. Magee, Dallas, Tex.; Secretary, Chief James McFall, Roanoke, Va.; Treasurer, Chief D. C. Larkin, Dayton, O.

Milwaukee was chosen as the meeting place for the 1911 convention. An amendment to the constitution providing that active members might become honorary members after retiring from office was adopted.

EXHIBITS AND EXHIBITORS

The firms making exhibits at the armory and the apparatus and appliances exhibited are as follows:

American-LaFrance Fire Engine Co., Elmira, N. Y. Five pieces of fire apparatus—ladders, engines and auto engines. C. J. Cross, general manager, H. E. Rhodes in charge.

Charles E. Berry, Somerville, Mass. Fire department supplies, hose spanner, hydrant wrench, apparatus for hanging harness. Charles E. Berry in charge.

Bi-Lateral Fire Hose Co., 59 Clark street, Chicago, Ill. Fire hose. M. E. Baird, secretary in charge.

S. F. Bowser & Co., Inc., Fort Wayne, Ind. Fireproof oil storage systems, self-measuring pumps.

C. G. Braxmar Co., 10 Maiden Lane, New York City. Badges.

O. J. Childs Co., Utica, N. Y. Hand extinguishers. E. T. MacDougal in charge.

Combination Ladder Co., Providence, R. I. Fire department supplies. C. N. Richardson in charge.

Cory-Patterson Mfg. Co., Greenfield, O. Life net.

Davy Automatic Fire Escape Co., Syracuse, N. Y. Davy automatic fire escape.

Diamond Rubber Co., Akron, O. Rubber tires.

Samuel Eastman Co., Inc., East Concord, N. H. Nozzles and deluge sets.

Eddy Valve Co., Waterford, N. Y. Valves and hydrants.

Fabric Hose Co., Duane and Church streets, New York City. Fire hose. W. T. Cole, general manager, in charge.

Firestone Tire and Rubber Co., Akron, O. Rubber tires.

Fisk Rubber Co., Chicopee Falls, Mass. Rubber tires.

Gamewell Fire Alarm Telegraph Co., 19 Barclay street, New York City. Complete alarm apparatus.

Globe Mfg. Co., Pittsfield, N. H. Firemen's uniforms.

B. F. Goodrich Co., Akron, O. Rubber hose.

Goodyear Tire and Rubber Co., Akron, O. Rubber.

Hart & Many, 54 LaSalle street, Chicago, Ill. Door springs.

The M. H. Hart Co., 127 Duane street, New York City. Cellar pipes. M. H. Hart in charge.

Hasty Mfg. Co., Elgin, Ill. Safety gas valves and call boxes.

S. F. Hayward Co., 39 Park place, New York City. Hub brake.

Hydraulic Oil Storage Co., Detroit, Mich. A gasoline storage tank. F. A. L. Smith in charge.

Kanawha Chemical Engine Mfg. Co., 84 Cortlandt street, New York City. Forty h.p. auto engine with chemical tank, 100 gallons capacity. The machine made trip from New York to Syracuse between midnight, August 23, and reached Syracuse 4 p.m., August 24, averaging 32 1-3 miles per hour. In charge of Vice-President Meigs.

Knox Automobile Co., Springfield, Mass. Motor fire apparatus.

Larkin Mfg. Co., Dayton, O. Play pipes and shut-off nozzles.

Luitwieler Pumping Engine Co., Rochester, N. Y. New auto fire engine. S. W. Luitwieler in charge.

The Alexander Milburn Co., Baltimore, Md. Portable acetylene lights.

P. F. Morrissey, 48 1/2 Jefferson street, Auburn, N. Y. Twentieth Century release or stall trip. P. F. Morrissey in charge.

Andrew J. Morse & Son, 140 Congress street, Boston, Mass. Turret nozzles and play pipes.

New Departure Mfg. Co., Bristol, Conn. Fire bells.

Niagara Lead and Battery Co., Niagara Falls. Electric searchlights.

E. P. Off Dental Mfg. Co., Inc., 5119 Stiles street, Philadelphia, Pa. Fire helmets. Dr. F. M. Turner in charge.

Pyrene Mfg. Co., 34 West 33d street, New York City. Chemical extinguisher, extinguishes gasoline fires.

G. C. Reiter, Canton, O. Gongs and bells.

Rensselaer Mfg. Co., Troy, N. Y. Hydrants and valves.

Republic Rubber Co., Akron, O. Rubber tires.

Robinson Fire Apparatus Mfg. Co., St. Louis, Mo. Auto chemical.

Rochester Automatic Sliding Pole Cover Co., 21 Market street, Rochester, N. Y. Patented sliding pole.

Servus Rescue Equipment Co., Newark, N. J. Oxygen helmets, searchlights.

Sheldon Axle Co., Wilkesbarre, Pa. Empire ball-bearing axles.

The Seagrave Co., Columbus, O. Aerial truck.

The Tea Tray Co., Newark, N. J. Chemical tanks, hand extinguishers.

Turnbull Smith Co., Syracuse, N. Y. Faucets. William H. Smith in charge.

United States Fire Protection Co., Utica, N. Y. Davy automatic fire escape.

Voorhees Rubber Mfg. Co., Jersey City, N. J. Rubber hose. L. R. Fletcher in charge.

Walsh Safety Lock Snap Co., Detroit, Mich. Hose patches, bell ringers, lock snaps. E. B. Wolfram, manager, and Lieutenant O'Brien in charge.

Webb Motor Fire Apparatus Co., St. Louis, Mo. Four pieces fire apparatus: Engines, chemicals and combination wagon.

A. C. Webb, president; A. R. Forse, secretary in charge.

John A. Welder, Rochester, N. Y. Welder new 1910 lock, extension hame and collar. John A. Welder in charge.

Westinghouse Co., Schenectady, N. Y. Horse-drawn gasoline fire engine.

D. A. Woodhouse, 50 West Broadway, New York City. General supplies. Represents Webb Motor Fire Apparatus Co.

New York State Association of Fire Chiefs—The seventh annual meeting was held at Syracuse August 22, about 60 members being in attendance. All the officers were re-elected for another year by a ballot cast by the secretary. They are as follows: President, George W. Sherwood, of Lowville; vice-president, D. J. Sullivan; directors: Thomas O'Connor and John Mack; secretary-treasurer, Henry R. Yates.

Seven County Firemen's Association—At the convention, Athens, Pa., Aug. 19, 51 companies and 20 musical organizations took part in the parade. The election of officers resulted as follows: C. W. Coates, Wellsville, president; Henry T. Albee, Galetton, Pa., vice-president; C. H. Collins, Corning, second vice-president; P. E. Decker, Athens, secretary; C. B. Wells, Towanda, Pa., treasurer. Corning was unanimously chosen as the place for holding the next convention.

Montana Society of Engineers—President F. M. Smith has appointed the following delegates to attend the Conservation Congress at St. Paul: President C. H. Bowman, of the Montana School of Mines; W. L. Dowling, chief engineer of the Northern Pacific Railway, with headquarters at St. Paul; Horace V. Winchell, M. E., Minnesota; James S. Hellison, C. E., and charter member of the society.

American Society of Engineering Contractors—The society will hold its annual convention at St. Louis, Mo., on Sept. 27, 28 and 29 in the Coliseum. The local committee of arrangements is E. H. Abadie, chairman; J. L. Westlake, W. C. Swartout and L. C. F. Metzger. Papers will be delivered by J. B. Goldsborough and Ed. Wegmann, both of New York, on Dam Construction for City Water Supplies, and by George C. Warren, of Boston, on Work Preliminary to Street Paving and Road Work. A banquet will be held and several sight-seeing trips will be made to important engineering work in and around St. Louis. D. J. Hauer, 12 Park row, New York City, is secretary of the association.

Engineers' Society of St. Paul—The society in response to a request from the officers of the Conservation Congress has appointed Major J. D. Du Shane, U. S. Corps of Engineers; Max Toltz, consulting engineer to railroads, and D. F. Jurgenson, consulting engineer, State Railroad Commission, to represent the society at the Congress and present a paper. The use of superheaters on locomotives will probably be the topic.

National Association of Cement Users—The seventh annual convention will be held December 12-23, in the concert hall of the Madison Square Garden, New York, N. Y. The exhibition will be combined with the first annual cement show in New York under the auspices of the Cement Products Exhibition Company, of Chicago, Ill. The question of reduced railroad rates is under consideration. The promise of papers already received and the important committee reports that are being prepared indicate that the program for the convention will be of the greatest interest and efforts are being directed toward making the convention exceed all previous ones in point of attendance and value of papers presented. The notice containing this information is signed by Edward E. Krauss, assistant to the president, Harrison Building, Philadelphia, Pa.

League of Cities of the Third Class of Pennsylvania—The eleventh annual convention was held in York, Aug. 23-25. Mayor Weaver's welcoming address was delivered before 100 delegates. He said that there was a growing sentiment in Pennsylvania and other States for a more centralized and simplified form of city government. Although the advantage of the commission form of government had been proved in some cases, locality, environment and financial considerations must be carefully considered. Frank P. Cummings, in his response in behalf of the delegates, also referred to the commission plan. He thought the matter would be viewed with distrust in Pennsylvania, and that any modification of the code should be made with great care. City Solicitor Thomas C. Hare, Altoona, in an address on Municipal Revenues, took the ground that mortgages, stocks, bonds, judgments and similar forms of personal property should not be taxed. Revenue should be demanded from the property that receives the benefit. City Solicitor James A. Gardner, New Castle, spoke of the effect of the new election plans, making the municipal elections in November of the odd years. M. A. Loeser, Harrisburg, speaking on Parks and Playgrounds, said that there were thousands of young men in reformatories who would not be there if they had been given the opportunity for the proper exercise of their vitality. George S. Schmidt, Harrisburg, described the parks of that city. City Solicitor D. A. Seitz, Harrisburg, spoke on Reform in the Law Governing Real Estate Assessments. A. C. Playdell, secretary New York Tax Reform Association, in discussing Mr. Seitz's paper, recommended a State tax commission. He told of the plan in use in New York and smaller cities. One way that better results can be accomplished until new laws are enacted, he said, is to publish the assessment list and give each property owner a copy. E. W. Doty, assistant manager of the Valuation Department of the Manufacturers' Appraisal Company, Philadelphia, explained the way in which five blocks in Philadelphia have just been assessed on the Sowers system. A unit price per foot for corner and inside lots has been worked out, and every property examined is scientifically assessed. When the unit value is found, he says, there is no trouble in assessing every bit of property in the city. City Solicitor Cochran, Chester, spoke on the City in Court. He said that excepting railways, municipalities were in court to a greater extent than any other litigant. For this reason they are entitled to a large say in establishing rules of practice in framing laws. He complained of the lack of support which city solicitors receive from the city officials, the result being that the solicitor becomes practically both lawyer and client. He spoke of a number of reforms needed in judicial practice. The power of cities of the third class over grade crossings was discussed by City Solicitor Keiser of Reading. He said that the powers were circumscribed and that present conditions would have to be tolerated until such time as public sentiment brings about a change.

George R. Wallace, Pittsburg, in an address on commission government in Pennsylvania, said that the fundamental trouble with our citizenship was ignorance of the supreme importance of the functions of government to a citizen and particularly to a city dweller. From

a purely financial point of view this ignorance is surprising for whereas the United States government costs \$14 per capita the government of Pittsburg, for example, costs \$30. Park Terrell, Columbia Trust Co., New York, spoke upon the issue of municipal bonds, telling of the minute variations in procedure which tend to increase or diminish the market value of securities. He said that the serial bond is coming into favor with conservative investors.

The complete list of officers elected was as follows: President, Mayor Henry A. McKeen, Easton; Vice-President, Select Council President Ira W. Stratton, Reading; Treasurer, ex-City Treasurer Jacob Craig, Jr., Chester; Secretary, City Clerk, Fred H. Gates, Wilkes-Barre; Trustees, Mayor Jacob F. Weaver, York; City Solicitor Malcolm Gross, Allentown; City Solicitor P. A. Wilbert, Oil City; Honorary Vice-Presidents, City Treasurer A. L. Reichenbach, Allentown; Select Councilman Ira J. Shelley, Altoona; Common Councilman J. G. Drehmer, Bradford; Select Councilman H. D. Wright, Chester; City Solicitor Charles P. Hughes, Erie; Select Council President Dr. Charles Colmer, Easton; City Solicitor D. S. Seitz, Harrisburg; Select Council President H. T. Atkins, Lebanon; Mayor H. S. Arthur, McKeesport; Select Council President Thomas H. Dixon, Newcastle; Mayor B. H. Carnahan, Oil City; Select Councilman George Romig, Reading; Common Council President L. B. Jones, Wilkes-Barre; Select Council President Hiram M. Ulman, Williamsport; Common Council President O. O. Ettline, York.

American Public Health Association—At the 38th annual meeting in Milwaukee, Wis., September 5-9, it is expected that 500 physicians, engineers and professors of national repute will attend. Much of the time will be devoted to the subject of "The Interrelation of National Organizations Working in the Interest of Health." Richard Watrous, secretary of the American Civic Association, will speak on this topic. Dr. Rudolph Hering will read a paper on "Modern Practice in Garbage Disposal." The present organization and work for the protection of health in the countries which are members of the association, is another subject on the program. Dr. Walter Wyman, surgeon general, Public Health and Marine Hospital service, will present the conditions in the United States; Dr. F. Montizambert, director general of public health, in Canada; Dr. Eduardo Liceaga, president of the superior board of health in Mexico, and Dr. Juan Guiteras, director general of public health in Cuba. A large number of unclassified papers will be read, including an illustrated paper on "The Conduct of a Fly Campaign," by Mr. Watrous, and a paper on "Saving Children from Milk-born Diseases," by Nathan Straus, New York. Maj. F. F. Russell, U. S. A., Washington, will read a paper on "Anti-typhoid Vaccination in the Army." Interesting sectional meetings will be those on vital statistics and municipal health officers.

Adirondacks Good Roads Society—This society was formed at a meeting of about 150 delegates, Saranac Lake, August 21. The organization embraces Franklin, Essex, Clinton and Warren counties. The following officers were elected: President, Dr. Lawrason Brown, Franklin; vice-presidents, J. B. Riley, of Clinton, C. T. Leland, of Essex, Arthur Sherman, of Warren, and W. C. Leonard, of Franklin; secretary

and treasurer, Robert C. Dudley, of Essex. The speakers were: George Stevens, of Lake Placid; former Senator F. B. Kilburn, E. P. Swenson, of New York; A. B. Williams, of the American Automobile Club; S. A. Howard, of Malone; Hon. J. B. Riley and Hon. F. G. Paddock, of Malone.

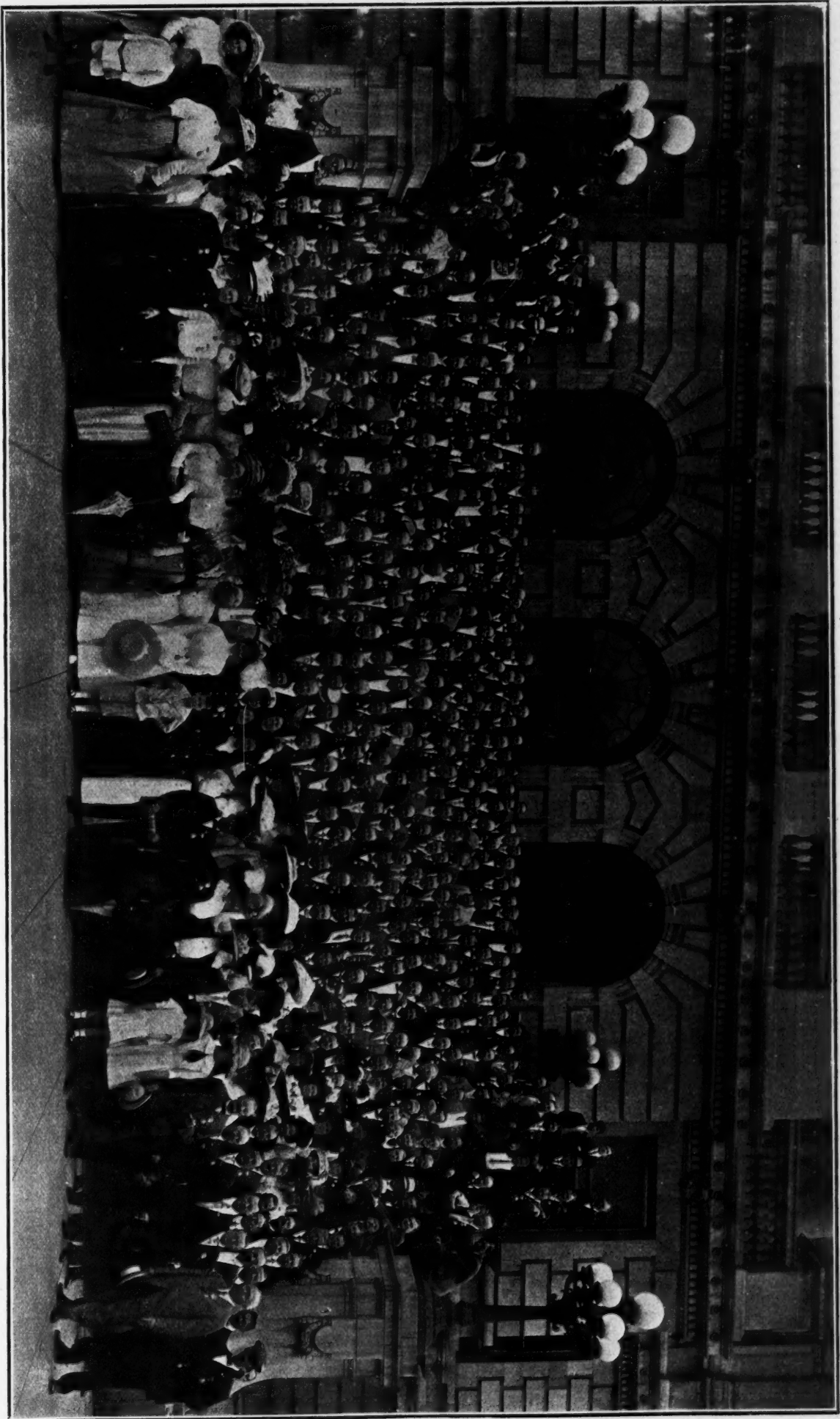
Ex-Mayors' Club of Macon—A unique but perhaps useful organization was formed at Macon, Ga., Aug. 19. Only five persons are now eligible to the club. The following officers were elected: President, W. A. Huff; vice-president, Felix Corput; treasurer, Henry Horne; secretary, Bridges Smith; chairman of the executive committee, A. L. Miller. By counting the number of offices it will be readily seen that it is needless to enumerate the membership.

Michigan Electric Association—The annual convention was held at Port Huron, Mich., Aug. 17-18. A. C. Martin, Port Huron, delivered the presidential address.

Iowa Association of County Supervisors—Questions of road construction and drainage were prominent at the meeting at Cedar Rapids, August 17. The sentiment was that the State was not yet ready to construct roads costing \$10,000 a mile, and that dirt walls well drained and well shaped would serve the present needs. Supervisor L. S. Fisher said that the one mill tax for roads was hardly enough, and he advocated legislation to increase the amount. He also advocated legislation turning bridge and culvert work over to the supervisors, who were practical men and had made good in regard to their road work. Resolutions were passed embodying these ideas as well as one requesting the Legislature to turn over half of the receipts from automobile licenses to the road fund. The organization and management of county road gangs was discussed by J. C. Manly, Poweshiek, and E. P. Blackburn, Dallas. Peter Swenson, O'Brien, gave an address on road drainage, referring particularly to the use of porous tile. Life Young, Des Moines, spoke on the need of better roads and highways connecting important cities and towns. C. P. Walker, Greene, spoke of concrete bridges and culverts and their economy. T. H. McDonald, State Engineer of Highways, gave a talk on concrete culverts and good and bad roads, presenting many illustrations. The 1911 convention will be held in Mason City.

Calendar of Meetings

- August 30-31.
New York State Police Chiefs' Association.—Eleventh Annual Convention, Schenectady, N. Y.—William Bell, President, Auburn, N. Y.
- September 5.
Greene County Firemen's Association.—Twenty-second Annual Convention, Tannersville, N. Y.
- September 5.
Rhode Island State Firemen's League.—Annual Muster, Manville, R. I.
- September 5-9.
American Public Health Association.—Annual Meeting, Milwaukee, Wis.—W. C. Woodward, Secretary, Washington, D. C.
- September 6-8.
Association of Edison Illuminating Companies.—Annual Meeting, Thousand Islands, N. Y.—Walter Neumuller, Assistant Secretary, 55 Duane St., New York, N. Y.
- September 6-9.
Pacific Coast Association of Fire Chiefs.—Eighteenth Annual Convention, Stockton, Cal.—A. A. Sumner, Secretary, Anacortes, Wash.
- September 6-9.
International Association of Municipal Electricians.—Fifteenth Annual Convention, Convention Hall, Rochester, N. Y.—Frank P. Foster, Secretary, Corning, N. Y.



INTERNATIONAL ASSOCIATION OF FIRE ENGINEERS

Photograph of members and guests taken on Court House steps, Syracuse, N. Y., August 24, on the occasion of the Thirty-eighth Annual Convention. More than 250 active Chiefs of Fire Departments were in attendance, including thirty-one from Canada, and several from other foreign countries

September 8-12. Michigan Gas Association.—Annual Meeting on Steamer sailing from Detroit. Mich.—Glenn R. Chamberlain, Secretary, Grand Rapids Gas Light Co., Grand Rapids, Mich.

September 14-15. Connecticut State Firemen's Association.—Twenty-seventh Annual Convention, Waterbury, Conn.

September 14-16. League of Michigan Municipalities.—Annual Convention, Lansing, Mich.

September 20-22. Central States Water Works Association.—Convention, Indianapolis, Ind.

September 20-23. Kansas State Volunteer Firemen's Association, Eureka, Kan.

September 21-23. Massachusetts State Firemen's Association.—Thirty-first Annual Convention, Lowell, Mass.—Burton Steere, President, Springfield, Mass.

September 21-23. Colorado Electric Light, Power and Railway Association.—Annual Convention, Colorado Springs, Col.—J. C. Lawler, Secretary, P. O. Box 938, Colorado Springs, Col.

September 21-23. New England Water Works Association.—Annual Meeting, Rochester, N. Y.—Willard Kent, Secretary, Narragansett Pier, R. I.

September 21-23. Massachusetts State Firemen's Association.—Thirty-first Annual Convention, Lowell, Mass.

September 26-30. National Irrigation Congress.—Annual Meeting, Pueblo, Col.—Arthur Hooker, Secretary, Pueblo, Col.

September 27-29. American Society of Engineering Contractors.—Annual Convention, St. Louis, Mo.—D. F. Hauer, Secretary, 12 Park Row, New York, N. Y.

September 28. New Hampshire State Firemen's Association.—Convention, Meredith, N. H.

October 6-8. American Automobile Association in cooperation with the National Grange, Farmer's Union, American Road Builders' Association, U. S. Office of Public Roads, and National Association of Automobile Manufacturers.—Third National Good Roads Convention, St. Louis, Mo.

October 10-11. Massachusetts Police Association.—Annual Convention, Holyoke, Mass.

October 10-14. American Street and Interurban Railway Association.—Annual Convention, Niagara Falls, Ontario.—H. C. Donecker, Secretary, 29 West 39th St., New York, N. Y.

October 11-16. American Society of Municipal Improvements.—Seventeenth Annual Convention, Erie, Pa.—A. Prescott Folwell, Secretary, 239 W. 39th St., New York, N. Y.

October 20-21. Ohio State Boards of Health.—Twelfth Annual Conference, Cincinnati, O.—Dr. C. O. Probst, Secretary, Columbus, O.

November 14-18. National Municipal League.—Annual Meeting, Buffalo, N. Y. Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.

November 21-23. City Commission Congress.—Meeting, Galveston, Tex.—R. E. L. Giles, Secretary, Galveston, Tex.

May 29. American Water Works Association.—Annual Convention, Rochester, N. Y.—J. M. Diven, 14 George St., Charleston, S. C.

PERSONALS

BELCHER, DONALD, has entered the employ of the Metropolitan Sewerage Commission of New York as Assistant Engineer.

CAMERON, COL. GEORGE, Jr., Petersburg, Va., has been elected Mayor to succeed William M. Jones, deceased. He is President of the National Bank of Petersburg, was for five years a member of the Common Council, and for three years Chairman of the Finance Committee.

CHILCOTE, MASON J., Deputy State Ex-

aminer of Engineers of Ohio, has resigned to become district superintendent of all the plants of the American Sewer Pipe Company throughout the United States. He was formerly superintendent of the American Sewer Pipe Company's plant at Akron, O.

DEPP, J. W., Chief of Police of Sapulpa, Okla., has been removed by Mayor McDougal on charges preferred by Rev. J. C. Jeter, and other citizens, but will fight the charges.

HAMILTON, HELEN, has entered the University of Michigan Engineering Department, and will specialize on sewer construction. Her father is an engineer whose specialty is sewer construction.

KENNEDY, T. O., for the past three years Assistant Superintendent of the Montgomery, Ala., Light & Water Power Company, has been appointed General Superintendent of the Lincoln, Neb., Gas & Electric Company.

MARCUM, GEORGE, London, Ky., has been elected Marshal to succeed Charles Litral, resigned.

MARTIN, GEORGE W., for some years in charge of the Bureau of Street Repairs, Borough of Brooklyn, New York City, died recently at Salem Centre, N. Y.

PHILLIPS, THOMAS J., Mayor of Ottumwa, Ia., has been removed from office by Judge K. E. Wilcocks, being found guilty of neglect of duty in permitting resorts and gambling houses to run, and of intoxication. He was a candidate for Governor several years ago.

SANZENBAKER, W. O., has been appointed by the State Board of Public Works of Ohio to take charge of canal improvement work in the vicinity of Massillon.

STANFORD, CHARLES W., Chief Engineer of the Department of Docks and Ferries, New York City, sailed for Europe recently to make an inspection of the principal foreign ports. During his absence the affairs of the department will be administered by Sidney W. Hoag, Jr., Deputy Chief Engineer.

SUDEKUM, DR. ALBERT, Berlin, Germany, is to visit the United States this fall to deliver a course of lectures on "German Municipal Activities." He is author of the German Municipal Year Book and a member of the Reichstag.

WILBUR, CHARLES E., Attleboro, Mass., has been appointed Chief of Police by the Board of Selectmen, succeeding John H. Nerney, who takes the new Chief's position as Probation Officer of the Fourth District Court.

YEAGER, GEORGE, Chief of Police of Des Moines, Ia., has been reinstated by the City Commission, with a "Clean bill of health," after investigation of charges brought against him by the Superintendent of the Anti-Saloon League.

NEW CITY OFFICIALS

Barnesville, Ga.—Aldermen, W. C. Jordan, J. W. Garland and A. L. Mills; the hold-over members are Mayor T. W. Cochran and Aldermen W. H. Mitchell, M. W. Smith and D. L. Anderson.

Bristol, Va.—City Engineer, C. A. Aldrich; Chief of Police, S. D. Keller; Water Commissioner, Frank Coleman; City Clerk, John H. Gose; City Attorney, Floyd H. Roberts; Milk Inspector, Dr. J. W. Graham; Street Commissioner, S. D. Keller; Chief Fire Department, S. D. Keller.

Petersburg, W. Va.—Mayor, R. W. Baker; Recorder, W. E. Hill; Councilmen, Cal. Ours, Frank Breathed, George B. Barger, W. A. Ervin and C. W. Shobe.

Perth Amboy, N. J.—Board of Health, Stephen Schultz, Thomas F. Burke and Robert W. Macan, succeeding Ambrose P. Kennedy, Richard Henderson and Justice Kaletsch.

Poplarville, Miss.—Mayor, J. C. Gridley; Marshal, F. E. Shivers; Clerk, E. P. Smith; Aldermen, J. S. Moody, M. N. McCoy, H. J. Arledge, H. B. Moore and J. E. Williams.

INCORPORATIONS

Avalon Boulevard Co., Camden, N. J.; construct a boulevard in the Borough of Avalon; capital, \$100,000. Incorporators: Charles R. Hall, Stone Harbor, N. J.; Albert J. Kummer, Harry D. Werkheiser, both of Philadelphia.

Crosswicks Water Co., Crosswicks, N. J.; operate water works; capital, \$50,000. Incorporators: Charles L. Day, William H. Ellis, George B. Thorn.

Delaware River Improvement Co., Newark, N. J.; construct a dam across the Delaware River at Boardman's Ferry; capital, \$100,000. Incorporators: Percy Ingalls, West Orange, N. J.; Farley Osgood, South Orange, N. J.; Howard C. Gilmour, Newark.

Glen Rock Water Co., Jersey City, N. J.; operate water works; capital, \$25,000. Incorporators: Frank Bergen, Horace K. Corbin, Frederick K. Day, all of Elizabeth, N. J.; Abel R. Corbin, Metuchen, N. J.; Robert J. Bain, Jersey City, N. J.

Hingham Granite & Contracting Co., Augusta, Me.; quarry granite and a general contracting business; capital, \$1,000,000. Incorporators: President and Treasurer, E. M. Leavitt, Winthrop, Me.; Clerk, Lewis A. Burleigh, Augusta, Me.

Hydraulic Engineering Co., Portland, Me.; construct and operate hydraulic works, and all water, gas and electrical works, etc.; capital, \$500,000. Incorporators: President, A. F. Dunham; Treasurer, M. S. Wells; Clerk, Charles D. Booth, all of Portland, Me.

Indiana & Kentucky Power Co., Jersey City, N. J.; electric light, heat and power company; capital, \$50,000. Incorporators: H. O. Coughlan, S. A. Anderson, John R. Turner, all of Jersey City, N. Y.

Jamestown Construction Co., Jamestown, N. Y.; deal in building materials, paving, build foundations, walls, etc.; capital \$75,000. Incorporators: Chas. Swanson, Clyde T. Curtiss, Ferd. C. Olson, all of Jamestown, N. Y.

Jersey Sweeper Co., Jersey City, N. J.; manufacture street cleaning machinery; capital, \$10,000. Incorporators: Alfred L. Lovejoy, Henry Franz, both of New York City; William R. Armstrong, Jersey City, N. J.

The Lexington Village Water Co., Lexington, Greene Co., N. Y.; supply water; capital, \$6,000. Incorporators: Geo. B. Van Valkenburgh, Edward Griffin, Edward O'Hara, all of Lexington, Greene Co., N. Y., and four others.

Mississippi River Power Co., Portland, Me.; construct, equip and operate dams, reservoirs, canals, power houses for the transmission of electric energy, etc.; capital, \$500,000. Incorporators: President, E. M. Mitchell; Treasurer, H. C. Wilbur; Clerk, Chas. D. Booth, all of Portland, Me.

Norton Water Co., Boston, Mass.; supply water; capital, \$100,000. Incorporators: President, Andrew H. Sweet, Norton; Treasurer, Henry A. Hanscom, Medford; Clerk, Henry A. Symonds, Waverly, all of Massachusetts.

O'Rourke Contracting Co., Yonkers, N. Y.; general contracting; real estate, building, etc.; capital, \$25,000. Incorporators: Thomas O'Rourke, Frank I. O'Rourke, Felix H. Poirier, all of Yonkers, and one other.

Pennsylvania Lanite Cast Stone Co., Haddon Heights, N. J.; manufacture cast stone, general construction work; capital, \$100,000. Incorporators: Edward M. Lane, Frederick Fries, J. Howard Hutchison, all of Haddon Heights, N. J.

Sewage & Garbage Co., Portland, Me.; manufacture and convert sewage and garbage into power, etc.; capital, \$1,000,000. Incorporators: President and Treasurer, Charles E. Allen, Arlington, Mass.; Clerk, George F. Gould, Portland, Me.

Surf City Water Co., Surf City, N. J.; operate water works; capital, \$7,000. Incorporators: George E. Paul, William H. Donahue, Edward J. Callahan, Thomas Callahan, Jr., Fred Gartner, James K. Troville, Frank H. Lancaster, all of Philadelphia, Pa.

United States Lanite Cast Stone Co., Haddon Heights, N. J.; manufacture cast stone, general construction work; capital, \$100,000. Incorporators: Edward M. Lane, Frederick Fries, J. Howard Hutchison, all of Haddon Heights, N. J.

The Withcheff-Krusz Concrete Forms & Construction Co., St. Louis, Mo.; to manufacture and deal in concrete forms; capital, \$100,000. Incorporators: Philip Kruez, Otto Schultes and Wm. Grond.

Sanitary Garbage Can Co., Van Wert, O.; capital, \$20,000. Incorporators: Charles A. Bliss and others.

TRADE NOTES

Cast-Iron Pipe.—Chicago: Market is quiet and prices are quoted as 50c. lower. Quotations: 4-inch, \$27; 6 to 12-inch, \$26; 16-inch and up, \$25. Birmingham: The general condition of the market is said to have improved. A fair volume of business is being placed. Quotations: 4 to 6-inch, \$22.50; 8 to 12-inch, \$21.50; over 12-inch, \$20.50. New York: More interest in the market is shown by the general trade. Quotations: 6-inch, \$23.50 to \$24, carload lots.

Lead.—Market is quiet, but prices are well maintained. Quotations: New York, 4.40c.; St. Louis, 4.30c.

Water Works Supplies.—The A. P. Smith Mfg. Co., formerly of Newark, N. J., is now occupying a new plant at Watsessing, N. J., located on the Delaware, Lackawanna & Western Railway. The company's address is now East Orange, N. J.

Car Fender.—The International Railroad Company, Niagara Falls, N. Y., is testing a fender invented by Thomas J. Marion, Trenton, N. J. One feature of the fender which local railway men believe is greatly to its advantage is that the motorman of a trolley car cannot turn on the brakes to start his car without dropping the life guard onto the rails. The fender is connected with the brakes of the car and the moment these are released the guard drops onto the track and is in position to pick up any obstruction that may come in its way. It is so arranged, the inventor claims, that it cannot be "bounced out of position" and the mechanism is such that if the fender is out of order the working of the brakes will show the motorman that his guard is not properly adjusted.

Great Hydro-Electric Plant.—After five years of work the plant of the Pennsylvania Water and Power Company at McCalls Ferry has been almost completed, in fact, two of the five 13,500-horsepower dynamos are now in operation. The plant is second in capacity in this country only to that at Niagara and has cost about \$10,000,000. The dam across the river is 2350 feet long, and the crest is 40 feet above normal low water level. It is built entirely of concrete and contains 300,000 cubic yards. Ultimately the plant will be capable of developing 135,000 horsepower. Much of the power used in Baltimore will be developed at McCalls Ferry.

Crushing Machinery.—The American Stone Company, Richmond, Va., which controls a large quarry near that city, is figuring on the installation of a compressor plant, power, crushing and handling machinery, including a locomotive crane.

Power and crushing machinery will shortly be purchased by the Belmont Trap Rock Company for a new quarry to be developed near Herndon, Va. It will probably be electrically operated.

The Phillips Contracting Company is preparing to move its rock crushing plant from San Bernardino to Corona, Cal., and install a large amount of new machinery.

Figures are expected to be taken shortly by the Ransome-Crummey Company for one of the largest rock crushing plants in the Northwest, to be operated in connection with quarries at Klamath Falls, Ore. Other machinery will also be required.

Some new machinery for quarrying and cutting is being installed by the Sinclair Quarry Company at Carthage, Mo., and more will be needed later on.

Fire Engine Test.—Chief E. J. Kingsley, of the Fire Department of Aberdeen, S. D., has written to the company regarding a test of a Nott fire engine recently received, as follows: "On the three line test the pump pressure exceeded by 60 pounds the guarantee that you gave, and sent the three streams with considerable clearance over a four-story building. The 1½-inch stream was thrown to a great height. The test that proved the most convincing and satisfactory to the committee was made on a dead end main with the hydrant pressure 20 pounds to start running down to a vacuum of 10 inches throwing three good streams. We also put the three streams clear over a six-story building, also the 1½-inch stream, and this with a vacuum from the hydrant on Main street. You will recall that I predicted that the engine would exceed the guarantee by at least 20 pounds pressure on the pump. I am more than pleased with the work of the engine. The water being of an alkaline nature made considerable trouble in foaming. Had it not been for that I am satisfied that the engine would have made even a better showing. However, we are all satisfied and pleased that we have such a valuable adjunct to our Fire Department."

Fire Apparatus.—James Boyd & Brother, Inc., 25th and Wharton streets, Philadelphia, Pa., announce that on September 1 they will move their sale department from the North American Building, combining it with their factory and warehouse. Their factory is devoted to the manufacture of fire extinguishing apparatus, including motor and horse-drawn chemical engines and hose wagons, fire extinguishers, hose couplings, pipes, hose carts, hose racks, etc. They are also selling agents for the Electric Hose & Rubber Company and the Eureka Fire Hose Manufacturing Company.

Rubber Tires.—At the annual meeting of the Firestone Tire & Rubber Co., held in Akron, O., August 24th, the former board of directors was retained and the following officers were re-elected for the coming year: H. S. Firestone, President and General Manager; Will Christy, Vice-President; S. G. Carkhuff, Secretary, and J. G. Robertson, Treasurer. The usual yearly gain in sales was reported and it was announced that the new model tire plant now in process of construction will be completed and in full operation by February, increasing the manufacturing capacity four-fold. R. J. Firestone, sales manager, reported a very gratifying demand for quick-detachable demountable rims from all portions of the country, and contracts entered into with most of the leading automobile manufacturing companies, many of whom will use these rims as exclusive equipment on their 1911 cars.

Electric Railroad Apparatus.—The Allis-Chalmers Company has just won, in litigation with the General Electric Company, an important patent suit, which establishes its right to the manufacture of certain types of electric railroad apparatus, the company having become, within the past six years, an important factor in the field of traction line equipment.

Creosoted Lumber.—The National Lumber & Creosote Company will erect a new plant at the junction of the Great Northern and the Houston & E. & W. Texas railroads, Houston, Tex. The buildings will be of brick and will be fitted with all modern machinery. About 150 men will be employed.

Freight Rates.—The executive traffic committee of the Eastern Commercial Organizations, at a meeting in the offices of the Merchants' Association of New York last week, retained Louis D. Brandies, Boston, Mass., as counsel to represent the shippers' interests in the advance in freight rate cases at the forthcoming hearings before the Interstate Commerce Commission. The membership of the Eastern Commercial Organizations consists of the leading commercial bodies from Boston to Richmond located in Atlantic seaboard territory. The first hearing will take place in New York City on September 7. D. O. Rives, the chairman of the Eastern Commercial Organizations, accompanied by counsel, will argue for the East at the hearing before the Interstate Commerce Commission in Spokane, Wash., on September 13, when testimony will be taken in support of the protests against the Commission's recent decision in the Spokane rate case.

New Process Castings.—The General Foundry Company, recently incorporated at Bradford, Pa., has equipped a plant with furnaces and machinery for the manufacture of converted steel castings by its own special process which enables such castings to compete with malleable iron and open hearth steel. The manufacturer makes strong claims for the new product as to its cleanliness, strength and comparative cheapness. It can be tempered and case hardened. During the company's operations some interesting results have been obtained, a summary of which is printed in a series of circulars which are being sent to machine tool builders, car works, railroads, etc. Copies may be obtained by addressing the superintendent, who is an experienced foundryman. A complete laboratory is used in connection with the foundry, the new castings being made by the application of scientific methods. The general sales office is at Bradford, Pa., and agencies are to be established in the larger and more important manufacturing centers. E. T. Ward is manager, C. P. Kennedy is treasurer and J. E. Coulter is superintendent. W. H. Hulme, of Bradford, has a large interest in the company.

Pumping Engine.—The John H. McGowan Company, Cincinnati, has recently booked an order from the municipality of Chillicothe, Ohio, for one of its triple expansion engine pumping outfits having a capacity of 2,000,000 gallons. It is also getting ready for shipment a similar outfit of 3,500,000 gallons capacity for the Madison, Ind., water works.

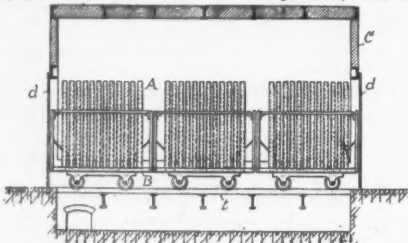
Combination Air Compressor and Gas Engine.—The Flickinger Iron Works, Bradford, Pa., is manufacturing a combination gas engine and air compressor for supplying power and compressed air simultaneously. Both the engine and the compressor operate as a combined unit, one end of a single cylinder being used as an explosion chamber to develop the power, while the other acts as a compressor. This arrangement enables the machine to be instantly converted into a simple gas engine while running, or to throw the compressor into commission at any time, a feature which would be especially applicable to shops where power is required continuously and compressed air only at intervals.

Valves.—The O. O. Storle Valve Company, Green Bay, Wis., is starting work on a three-story factory building. W. J. Hess is manager. The machinery needed has been provided for.

PATENT CLAIMS

966,729. PROCESS OF MANUFACTURING PULP PIPE. Stephen R. Bradley, South Nyack, N. Y., assignor to the Fibre Conduit Co., Orangeburg, N. Y., a Corporation of New York. Serial No. 412,440.

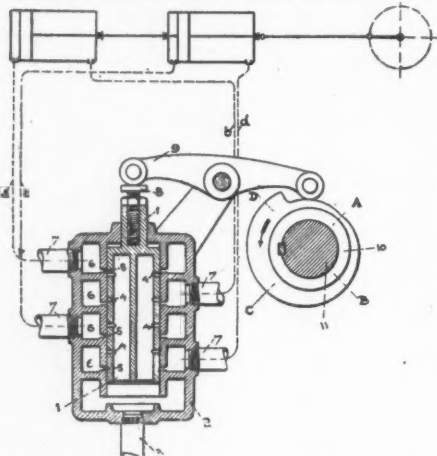
The process of felting the fibers of pulp pipe which consists in subjecting the in-



terior of the pipe to drying action by gases unsaturated with moisture passed there-through, while circulation of such gases over the exterior surface of the pipe is obstructed, substantially as described.

966,867. VALVE. Carl G. Sprado, Milwaukee, Wis., assignor to Allis-Chalmers Co., Milwaukee, Wis., a Corporation of New Jersey. Serial No. 293,582.

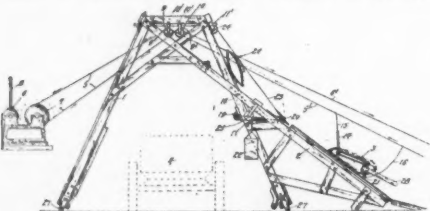
The combination of a casing provided with a plurality of ports, of a reciprocable valve member provided with a like number of ports located within said casing and subjected to the pressure of a fluid within said casing whereby it is adapted to be moved in one direction, means for positively mov-



ing said valve member in the opposite direction, each of the ports of said valve member being adapted to register with a port in the casing during a reciprocation of said valve member, each of said ports in said valve member, however, registering with a port in the valve casing at a different period of the cycle than any of the others, said valve member being adapted to be moved from an initial position through a plurality of reciprocations in order to complete its cycle.

967,613. SYSTEM OF DEVICES FOR EXCAVATING AND LOADING GRAVEL AND THE LIKE. William H. Compton, Milwaukee, Wis.—Serial No. 516,420.

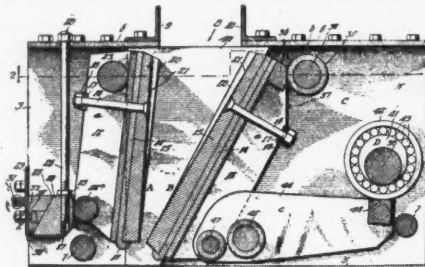
In an elevating system of the described class, the combination of a derrick, a table pivotally connected at its upper end to said derrick, a trip member connected with said table, an elevating scoop, a bail connected with said scoop, a trip member connected with the lower rear end of said scoop, a scoop operating cable connected with said bail, a counterbalancing weight, a pulley



suspended from said derrick above said table, a flexible member connected at one end to said table below its pivotal support passing from thence over said pulley and connected at its opposite end with said weight, said weight being adapted to partially counterbalance the weight of said table and scoop and retard their rearward movement after the contents of said scoop have been discharged independently of the action of said scoop operating cable.

966,651. ROCK BREAKER AND CRUSHER. Walter J. Cochran, Los Angeles, Cal.; Phoebe Cochran administratrix of said Walter J. Cochran, deceased. Serial No. 465,730.

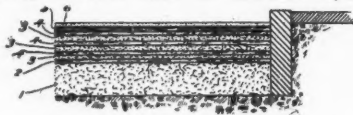
In a crushing mechanism, a frame; a lever pivoted on the frame; a crushing jaw pivoted at one end of the lever, the plane



determined by the axes of the lever pivot and the jaw pivot being oblique to the crushing face of the jaw, an abutment on the frame; and a surface on the jaw in engagement with the abutment, the surface being oblique to the crushing face of the jaw.

966,982. ROAD AND STREET CONSTRUCTION. Joseph Hay Amies, Philadelphia, Pa., assignor to the Amies Asphalt Co., Philadelphia, Pa., a Corporation of South Dakota. Serial No. 469,464.

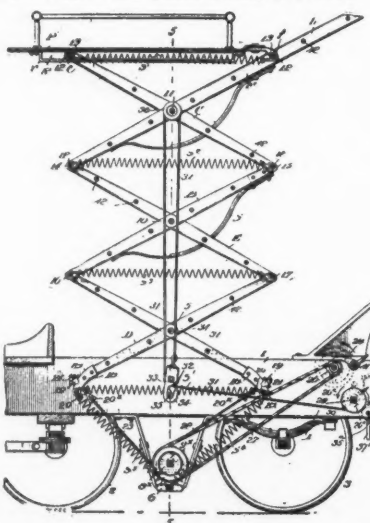
The herein described mode of road, street and similar construction, which consists in mixing calcium oxid or calcium hydrate



with the subsoil in situ, thus supplying the said subsoil with lime required and neutralizing the acids thereof, then adding and mixing therewith Portland cement to form a concrete foundation, then flushing the face of the said concrete foundation with a liquid asphaltic or bituminous cement, then placing the topping soil thereon in layers, the said topping soil having been previously mixed with calcium oxid or calcium hydrate thus neutralizing the elements in the said soil destructive to the said cement, and then successively placing over the said layers of topping soil, hot asphaltic or bituminous cement, then compressing the whole, then flushing the same with liquid asphalt, then covering the whole with grit, screenings, sand and the like, and then again compressing the same to a finished surface.

967,116. EXTENSION FIRE-LADDER. Joseph Dupuis, Fall River, Mass., assignor of one-half to Ignace Coulombe, Fall River, Mass. Serial No. 544,102.

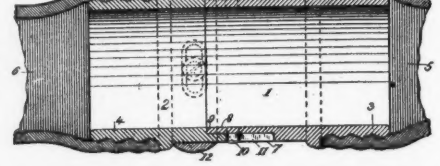
In an extension ladder, a support, a rod carried by said support, a pair of lazy tongs pivotally mounted on said rod, a plate secured to each of the lower members of said lazy tongs, said plate being provided with



a recess, a head movably disposed in each of said recesses, said heads having a bore, a bolt disposed in the bore of each head and provided with a nut adapted to bear on the head a pair of drums mounted upon said support, a cable secured to the respective bolts, the opposite end of said cable being wound around one of said drums, and means for rotating said drums.

966,925. HOSE-COUPLING. Henry E. Kirtledge, Boston, Mass. Serial No. 474,262.

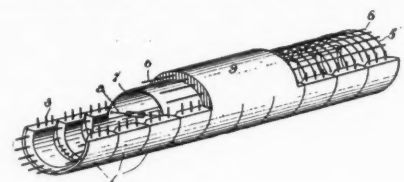
A hose-coupling having, in combination, a male member having an end provided with lugs, a female member having a



shoulder and an extension, the latter having a smooth outer surface and bayonet-slots, an adjustable ring mounted snugly on the extension and abutting said shoulder, and a locking bolt for one of the lugs and locking means for the ring both carried on the ring.

967,163. PIPE AND PROCESS OF MAKING THE SAME. Jacob B. Blaw, Pittsburgh, Pa., assignor to Blaw Collapsible Steel Centering Company, Pittsburgh, Pa., a Corporation of New Jersey. Serial No. 543,847.

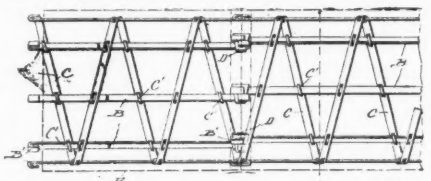
The process of forming pipe which consists in placing a series of inverts end to



end and resting upon and securing to the edges of such inverts a plastic arch adapted to harden and constitute a monolithic support for the inverts.

967,427. REINFORCED-CONCRETE PIPE. John M. Phelan, Jackson, Mich., assignor to Reinforced Concrete Pipe Company, a Corporation of West Virginia. Serial No. 387,105.

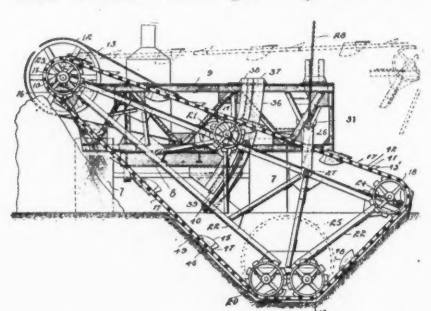
In a concrete pipe section, a continuous spiral band embedded in said section, said band having loops punched therefrom at



regular intervals, and longitudinally arranged bars also embedded in the concrete, each bar passing through a number of said loops.

967,440. EXCAVATING MACHINE. Nathaniel Ronneberg, Chicago, Ill. Serial No. 497,936.

In a machine for digging ditches, the combination of a truck, a shaft supported at the rear end of said truck, means for turning said shaft, a substantially triangular frame pivotally mounted at one of its apexes on said shaft, driving sprockets secured to said shaft, guide sprockets ar-



ranged at the other apexes of said frame, chains around said driving and guide sprockets, excavating and elevating devices carried by said chains, said frame being arranged transversely of the line of progression of said truck and one of the apexes of said frame being directed downwardly so that the lower reaches of the chains will conform substantially to the shape of the ditch to be excavated, means for raising and lowering the free end of said frame, and a guide for guiding said frame in its up and down movements.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Kentucky	Louisville	Sept. 2 2 p.m.	Improving sidewalks, 18 ordinances.	R. G. McGrath, Sec'y. Bd. Pub. Wks.
Ohio	Columbus	Sept. 2 noon	Macadamizing South Davis road.	John Scott, Clk. Co. Comrs.
West Virginia	Huntington	Sept. 2 1 p.m.	Grading, curbing, paving, etc., portions of sundry streets.	John Coon, Comr. of Streets.
New Jersey	Hackensack	Sept. 2 2 p.m.	Improving Essex st., from Terrace ave. to Saddle river.	E. T. Galloway, Bd. Freeholders.
Pennsylvania	North Braddock	Sept. 2 3 p.m.	Paving 3 aves., also for 724 ft. 8- and 6-in. t.c. pipe, Main st.	C. A. Stewart, Boro. Engineer.
New York	Buffalo	Sept. 2 11 a.m.	Paving 6 streets, 22 to 30 ft. wide.	F. G. Ward, Comr. Pub. Wks.
Connecticut	Hartford	Sept. 2 2 p.m.	Bldg. 13 gravel or macadam roads, 98,432 ft. long, culverts, etc.	State Highway Commissioner.
Ohio	Toledo	Sept. 2 10 a.m.	Macadamizing, grading, draining County road.	Charles Sanzenbacher, County Aud.
New Jersey	Rutherford	Sept. 2	Laying 6-in. macadam portions of 3 streets.	F. A. Stedman, Boro. Clerk.
Pennsylvania	Harrisburg	Sept. 2	Bldg. 10,802 lin. ft. road from White Horse to Gap, Lancaster Co.	Jos. W. Hunter, State Hwy. Comr.
Florida	Palatka	Sept. 2 10 a.m.	Bldg. 10 miles hard-surfaced road toward Bannerville.	R. F. Ensey, County Engineer.
Pennsylvania	Danville	Sept. 2 noon	Brick paving and stone curbing, E. Market st., First Ward.	Harry B. Patton, Boro. Sec'y.
Minnesota	Duluth	Sept. 2 10 a.m.	Paving 2 blocks, Lake ave., 2 alleys; stone gutters, 3d. st.	O. G. Olson, Pres. B.1. Pub. Wks.
Illinois	Chicago	Sept. 2 noon	Grading, curbing, paving, adjusting sewers, etc.	A. F. Keeney, Pres. B.1. Loc. Imp.
Ohio	Youngstown	Sept. 2 noon	Paving portions of 4 streets.	A. H. McMillen, Clk. Dir. Pub. Serv.
Ohio	Youngstown	Sept. 2 noon	Brick paving, grading, macadamizing 1.25 mi.; \$14,822.	State Hwy. Comr., C. of Co. Comrs.
Ohio	Akron	Sept. 2 11 a.m.	Resurfacing 2 miles W. Market st. or Medina road.	Jos. Gehres, County Surveyor.
Pennsylvania	York	Sept. 2 noon	Brick and bitulithic paving N. Duke st.	S. W. Rahm, Chm. Hwy. Comr.
West Virginia	Parsons	Sept. 3	Bldg. road to replace Slip Hill road; length 1 9-16 miles.	R. P. Pearson, County Engineer.
Illinois	O'Fallon	Sept. 3 3 p.m.	Constructing a macadam road.	Comr. of Hwys. C. of Twp. Clk.
Yorke	Yorke	Sept. 3 2 p.m.	Bldg. gravel road, 5,356 ft. long, K. and P. Trunk Line, Sec. 1.	Jas. P. Bragdon, Chm. Selectmen.
Maine	Kittery	Sept. 3 2 p.m.	Bldg. gravel road, 7,144 ft. long, K. and P. Trunk Line, Sec. 2.	J. R. Philbrick, Chm. Bd. Selectmen.
Ohio	Columbus	Sept. 3	Furn. 10,000 gals. Tarvia, 3,200 tons crushed limestone, and 1,000 tons screenings; excav. 13,836 cu. yds.	F. M. Sayre, County Auditor.
Indiana	Marion	Sept. 5	Bldg. macadam road in Franklin township.	A. Y. Stout, County Auditor.
Indiana	Williamsport	Sept. 5 1 p.m.	Bldg. gravel roads in Pine and Steuben townships.	R. L. Winks, County Auditor.
Indiana	Jeffersonville	Sept. 5 10 a.m.	Bldg. 3,607 lin. ft. gravel road in Monroe township.	County Auditor.
Indiana	Tipton	Sept. 5 10 a.m.	Bldg. gravel road in Cicero township.	J. F. Barlow, County Auditor.
Indiana	Decatur	Sept. 5 10 a.m.	Bldg. macadam road in Preble township.	County Auditor.
Indiana	Vernon	Sept. 5 11 a.m.	Bldg. 2 1-2 miles pike road in Bigger township.	T. L. Campbell, County Auditor.
Indiana	Rushville	Sept. 5 2 p.m.	Bldg. macadam road on township line also Orange township.	J. M. Stone, County Auditor.
Iowa	Fort Dodge	Sept. 5	Asphalt paving, comb. cement curb and gutter, 3 streets.	C. H. Reynolds, City Engineer.
Alabama	Attalla	Sept. 5 8 p.m.	Sidewalk paving about 600 yds; comb. curb & gutter, 800 ft.	Wilburn Hill, Gadsden, Engr.
Kentucky	Paducah	Sept. 5 3:30 p.m.	Granite curb, gutter, etc., new bids; see "Proposals," Aug. 31.	L. A. Washington, City Engineer.
Indiana	Salem	Sept. 5 1:30 p.m.	Bldg. Highland and Rinker's Creek road, cost \$9,528.	Jas. W. Elrod, Chm. Bd. Co. Comrs.
Mississippi	Vicksburg	Sept. 5 noon	Widening and grading Ward's Hill, near J. H. Hall's place.	J. D. Laughlin, Chancery Clerk.
Ohio	Columbus	Sept. 5 noon	Surfacing and resurfacing N. High st. pike, 2 twps.	F. M. Sayre, County Auditor.
Ohio	Waverly	Sept. 5 1 p.m.	Grading various roads in Pike County.	W. A. Woodell, County Auditor.
Mississippi	Jackson	Sept. 6 3:30 p.m.	Paving 25,000 sq. yds. N. State st., any noiseless material.	J. N. McLeod, Chm. St. Com.
Illinois	Kewanee	Sept. 6 8 p.m.	Bldg. macadam walk, bridge and fountain base, West Park.	O. D. Peterson, City Clerk.
Louisiana	New Orleans	Sept. 6 7:30 p.m.	Creo. wood block paving on concrete along river front.	Hugh McCloskey, Pres. Port Comrs.
Ohio	Youngstown	Sept. 6 11 a.m.	Grading hills, Ellsworth Twp.	C. T. Truesdale, County Treas.
Indiana	Vincennes	Sept. 6 2 p.m.	Bldg. 1,600 lin. ft. gravel road in Vincennes township.	County Auditor.
Indiana	Wabash	Sept. 6 2 p.m.	Bldg. gravel road in Waltz, macadam in Chester township.	County Auditor.
Florida	West Palm Beach	Sept. 6 noon	Furn. 6,000 cu. yds. live oyster shell at 2 points.	Board of County Commissioners.
New Jersey	New Brunswick	Sept. 6 11 a.m.	Bldg. Kingston and Aqueduct road.	Director Bd. Freeholders.
Montana	Billings	Sept. 6	Concrete walks, 276,366 sq. ft.; curb, 33,099 ft.; cross., 13,873 ft.	J. D. Mathewson, City Clerk.
New Jersey	Camden	Sept. 6	Bldg. stone road from So. Pemberton to Vincentown.	E. L. Thomson, 301 Market St., Eng.
Indiana	Crown Point	Sept. 6	Bldg. 5 gravel roads in North and one in St. Joseph Twp.	C. A. Johnson, County Auditor.
Indiana	Marion	Sept. 6	Grading and paving road in Franklin township.	A. Y. Stout, County Auditor.
Indiana	Paoli	Sept. 6	Bldg. 3,386 lin. ft. road in Northeast and 9,177 ft. Fr. Lick Twp.	A. B. Ham, County Auditor.
New York	Bronxville	Sept. 6 8 p.m.	Grading and paving Midland ave.; Chambers & Hone, 1 Liberty st., New York City, Engineers.	Frank Dinsmore, Village Clerk.
New Jersey	New Brunswick	Sept. 6 11 a.m.	Bldg. 2.56 miles stone road for county.	P. H. S. Hendricks, Div. Bd. Fr'hlds.
Indiana	Peru	Sept. 6 noon	Bldg. 7 gravel roads; total length 75,540 ft., 2 twps.	Chas. Griswold, County Auditor.
New Jersey	Trenton	Sept. 6 8 p.m.	Asphalt paving on concrete, 2 streets; Filbertine on concrete, 1 st.	Abram Swan, City Engineer.
Indiana	Salem	Sept. 6 1:30 p.m.	Bldg. 1 mile and 662 ft. gravel road, Ronkers Creek road.	S. G. Ellis, County Auditor.
Indiana	Sullivan	Sept. 6 2 p.m.	Bldg. a stone road in Cass Township.	Benj. C. Crowder, County Auditor.
Wisconsin	Waukesha	Sept. 6	Tar macadam paving, 12,140 sq. yds.; 6,632 lin. ft. concrete curb and gutter; 3,076 cu. yds. excav., 2 streets.	M. R. Butler, City Engineer.
Indiana	Muncie	Sept. 7	Paving Wyson St.; cost \$26,333.	County Auditor.
New York	Mt. Pleasant	Sept. 7 3 p.m.	Improving 2 roads, 0.67 and 0.78 mile.	E. F. Hennessey, Town Clerk.
Indiana	Lafayette	Sept. 7 9 a.m.	Constructing 3 gravel roads.	J. P. Foresman, County Auditor.
Ohio	Newark	Sept. 7	Grading and waterbound macadam, one mile, cost \$4,597.	State Hwy. Comr., C. of Co. Comrs.
Iowa	Atlantic	Sept. 8	Asphaltic concrete paving, 3 mi. cement curb, 6 mi. \$2,000 check	T. E. Nichols, City Clerk.
Indiana	Lebanon	Sept. 8 1 p.m.	Bldg. 2 1-2 miles gravel road in Sugar township.	County Auditor.
California	Oakland	Sept. 8 2 p.m.	Bldg. asphalt roadway in Lakeside Park; bond, \$10,000.	H. F. Vogt, Sec'y Park Comr.
New Jersey	Newark	Sept. 8 10 a.m.	Telford paving and grading 4 miles Pleasant Valley Way, from Bloomfield ave. to Verona to Mountain ave., W. Orange.	W. Ougheltree, Dir. Bd. Freeholders.
Ohio	Mansfield	Sept. 8 noon	Cement sidewalks, 60,000 sq. ft.; grading 2,000 cu. yds.	P. H. S. Hendricks, Div. Bd. Fr'hlds.
Illinois	Urbana	Sept. 8	Paving Washington st., cost \$28,000.	Alfred M. Danelly, City Engineer.
New Hampshire	Concord	Sept. 9	Surface graveling road in town of Gorham; cost \$7,900.	H. C. Hill, State Engineer.
Missouri	Kansas City	Sept. 9	Resurfacing 2 miles rock road on Little Blue road.	R. T. Proctor, County Engineer.
Ohio	Cleveland	Sept. 10 11 a.m.	Repairing Lorain road at bridge approach and at Rockport.	F. R. Lanier, County Surveyor.
Ohio	Hamilton	Sept. 10	Oiling improved portion of Millville pike; cost \$1,000.	Board of County Commissioners.
Ohio	New Lexington	Sept. 10	Paving Park ave. with asphalt.	Harry J. Stalter, City Clerk.
Ohio	Columbus	Sept. 12	Bldg. 8,342 ft. Jackson road requiring 2,780 tons crushed limestone or washed crushed gravel, spread and rolled.	John Scott, Clk. Co. Comrs.
Delaware	Ft. DuPont	Sept. 12	Macadamizing section of Port Penn road.	Constructing, Q. M.
New Jersey	New Brunswick	Sept. 12 2 p.m.	Bldg. 2,015 miles gravel road from Spotts road, south.	A. W. Bissett, Clk. Bd. Freeholders.
New York	Scarsdale	Sept. 12	Resurfacing 2.74 miles with bituminous macadam.	Frank Sibley, Town Clerk.
Ohio	Euclid	Sept. 12 noon	Paving and improving Lawnview ave.	N. J. Brewer, Village Clerk.
Arizona	Phoenix	Sept. 13	Bldg. Territorial highway between Bisbee and Douglas.	Robt. A. Craig, Sec'y Bd. Control.
New York	Olean	Sept. 13 7:30 p.m.	Bldg. 15,000 sq. yds., also 800 sq. yds. vit. brick pavement, and 9,000, also 800 lin. ft. concrete curb and gutter, 2 streets.	R. B. Fordsworth, City Engineer.
New Jersey	Tenafly	Sept. 14 8 p.m.	Bldg. 1,536 miles Sylvan ave. or Blvd., in Tenafly.	William P. Eager, Mayor.
North Carolina	Whiteville	Sept. 15 2 p.m.	Paving 12,000 sq. yds.	W. Ross Davis, Mayor.
Indiana	Vernon	Sept. 15 11 a.m.	Bldg. 3 miles gravel road in Vernon township.	County Auditor.
Pennsylvania	Harrisburg	Sept. 16 2 p.m.	Bldg. 3 roads, 5,900, 5,500 and 1,076 lin. ft.	J. W. Hunter, State Hwy. Comr.
Wisconsin	Racine	Sept. 17 10 a.m.	Concrete paving, 2 jobs; concrete curbing, 2 jobs.	P. H. Connolly, Pres. Bd. Pub. Wks.
Ohio	Lakewood	Sept. 19	Paving Northland and Franklin aves., Evers Eng. Co., Arcade, Cleveland.	B. M. Cook, Village Clerk.
Ohio	Linden Heights	Sept. 20	Bldg. sidewalks and gutters in village.	Village Council.
California	Hermosa Beach	Sept. 23	Warrenite paving, on 5-in. bituminous concrete base, \$60,000.	E. McCoskey, City Clerk.
West Virginia	Huntington	Sept. 23 1 p.m.	Excavating 2,480 cu. yds., bldg. sewer in alley.	John Coon, Comr. of Streets.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
SEWERAGE				
Kentucky	Louisville	Sept. 2, noon	Bldg. Sec F, Beargrass Interceptor, Conc. Sewer, cut, 21.2 ft	P. L. Atherton, Chm. Sewer Bd
Pennsylvania	North Braddock	Sept. 2, 3 p.m.	Bldg. 354 ft., 8-in., 420 ft. 6-in. pipe sewer, repaving, etc.	C. A. Stewart, Boro. Engineer.
Ohio	Elyria	Sept. 2	Bldg. sewers in portions of Gulf, Poplar and Hamilton sts.	Ross Mority, Clk., Bd. Pub. Servs.
Ohio	Youngstown	Sept. 2, noon	Bldg. sewers in portions of 5 streets.	W. H. McMillen, Clk. Bd. Pub. Serv.
Indiana	Evansville	Sept. 3, 10 a.m.	Bldg. 12-in. vit. pipe an two alleys.	S. A. Bartholome, Clk. Bd. Pub. Wk
Iowa	Hawarden	Sept. 3, 8 p.m.	Bldg. 18,000 ft. 8, 10 and 12-in. vit pipe.	T. J. Reeves, City Clerk.
New York	Rochester	Sept. 3, 10 a.m.	Bldg sewage disposal plant at Tuberculosis Hosp.	T. J. Bridges, Chm. County Comrs.
Ohio	Newburgh Hgts.	Sept. 3, noon	Bldg. sewers in number of streets.	A. W. Shatts, Village Clerk.
Maryland	Centreville	Sept. 5, noon	Bldg. 12,500 ft. 8, 10 and 12-in. sewers, 2,400 ft. house con., 45 manholes; Morse and Cockey, Engrs., Baltimore, Md.	Board of Town Comrs.
Wisconsin	Watertown	Sept. 5, 2 p.m.	Bldg. 974 ft., 18-in.; 1,269 ft. 15-in.; 789 ft., 10-in. vit. pipe sewer, 9 manholes, 1 flush tank, 6 catch basins.	C. A. Kading, Chm. Bd. Pub. Wks.
Indiana	Newcastle	Sept. 5	Bldg. 3,150 ft., 15-in.; 6,000 ft., 18-in. vit. pipe sewers, 6-in. Y-con.	W. S. Friel, City Engineer.
Pennsylvania	Johnstown	Sept. 5	Bldg. sewer in Von Lunen road and Hoffman alley, Dale Boro.	P. L. Wiand, Burgess, Dale Boro.
Wisconsin	Appleton	Sept. 6	Bldg. sewer in Lennox st., from Mason to Outagamie st.	Chas. Fose, Chm. Bd. Pub. Wks.
Florida	West Palm Bea h	Sept. 6, noon	Furn. galv. corrugated metal culvert pipe, different sizes.	W. H. DaCamara, Chm. Co. Comrs.
Nebraska	Omaha	Sept. 6, 2 p.m.	Bldg. 8, 12, 15 and 30-in. sewer in Dists. #12, 13, 15 and 16.	Dan B. Butler, City Clerk.
Minnesota	Brainerd	Sept. 6	Bldg. lateral sewer N in Sewer Dist. No. 1.	V. N. Broderick, City Clerk.
New Jersey	Trenton	Sept. 6, 8 p.m.	Bldg. sewers, house con., etc., Klagg and Ingham aves., Turpin street.	Harry B. Salter, City Clerk.
Iowa	Emmetsburg	Sept. 6	Bldg. 2,987 ft. 8-in. vit. sewer pipe in Bwy., 14th, 16th, Union sts	F. E. Rutledge, City Clerk.
Wisconsin	Evansville	Sept. 6, noon	Engineer to supervise and install sewerage plant.	F. W. Gillman, City Clerk.
South Dakota	Sioux Falls	Sept. 6, 9 a.m.	Bldg. 66,000 ft. 8 to 36-in. sewer; \$10,000 check.	Lewis Larson, City Auditor.
Ohio	Upper Sandusky	Sept. 6	Bldg. sanitary and surface water sewer in Warpole street.	City Clerk.
Maryland	Baltimore	Sept. 7, 11 a.m.	Bldg. 23,000 ft. 8-15-in. vit. pipe, 30 ft. 30-in brick and concrete sewer; 10,000 ft. 6-in. house connection, Dist. 14.	G. N. Numsen, Pres. Bd. Awards
Michigan	Owosso	Sept. 8, 2 p.m.	Bldg. 1,600 ft. 24-in., 880 ft. 20-in., 500 ft. 15-in. sewer; 80 Ys, 12 manholes, special catch box in inlet for flushing.	E. F. Joskin, City Engineer.
North Dakota	Carrington	Sept. 9, 7:30 p.m.	Bldg. septic tank, main outlet sewer, also sewers, Dist. No. 1.	H. L. Winterer, City Auditor.
South Carolina	Greenville	Sept. 10, 4 p.m.	Bldg. 6 miles 8-in. sanitary sewer extensions, etc.	C. P. Ballenger, City Engineer.
Michigan	Cadillac	Sept. 10	Bldg. sewage disposal plant, to include 2 small pumps.	R. E. Eisner, City Engineer.
South Dakota	Vermillion	Sept. 12, 8 p.m.	Bldg. a sewer.	C. L. Vaughn, City Auditor.
New York	Olean	Sept. 13, 8 p.m.	Bldg. vit. pipe sewer, etc., in Main st. from No. Union to Arch.	Geo. H. Luther, Chm. Bd. Pub. Wks
Indiana	New Castle	Sept. 15, 7:30 p.m.	Bldg. sanitary sewer.	L. M. Johnson, City Clerk.
Ohio	Newburg	Sept. 17, noon	Bldg. sewers and water mains in various streets.	J. W. Shimek, Clk. Bd. of Control.
California	Brawley	Sept. 19	Bldg. \$18,000 sewer system.	W. H. Whelan, City Clerk.
Texas	El Paso	Sept. 20, 10 a.m.	Bldg. complete garbage refuse and sewerage disposal plant; sewerage plant capacity, 3,000,000 gals, daily, refuse distruc-tors, 3 tons per hour.	C. W. Fassett, City Clerk.
California	Oakland	Sept. 21, 11 a.m.	Bldg. storm sewer in San Pablo ave., \$5,000 bond.	W. B. Fawcett Sec'y Bd. Pub. Wks
West Virginia	Huntington	Sept. 23, 1 p.m.	Bldg. lateral sewers in alley bet. 11th and 12th sts, 2 blocks.	John Coon, Comr. of Streets.
Pennsylvania	West View	Oct. 1, noon	Bldg. main sewer and disposal plant, plans by Trimble & Miller, Fourth ave., Pittsburg.	H. L. Donaldson, Boro. Sec'y.
WATER SUPPLY				
North Dakota	Edgele	Sept. 2, 8 p.m.	Drilling 4-in. well at village electric lighting plant.	J. E. Bowen, Village Clerk.
Ohio	Cleveland	Sept. 2, noon	Furnishing pig lead for City Water Dept.	A. B. Lea, Dir. Pub. Service.
Nebraska	Clarks	Sept. 2, 8 p.m.	Bldg. \$8,500 water works; Martz Bros., Seward, Engrs.	Village Clerk.
Nebraska	Palisade	Sept. 2, 7 p.m.	Installing water works system; \$400 check.	L. E. Thrash, Village Clerk.
Nebraska	Cozad	Sept. 2, 6 p.m.	Bldg. water works system; as whole or in parts.	Hershey S. Welch, C.E., No. Platte.
North Dakota	Grand Forks	Sept. 5, 3 p.m.	Reconstructing stone sand filter, constructing rapid sand filter.	C. J. Evanson, City Auditor.
Pennsylvania	Conneaut Lake	Sept. 5, 8 p.m.	Laying 9,800 ft. 4-6-in. water mains, 17 hydrants, 16 valves.	T. F. Armour, Boro. Clerk.
Iowa	Ames	Sept. 5	Furnishing 1,968 ft. 4-in. and 150 ft. 8-in. water pipe.	Water Works Committee.
Mississippi	Leakesville	Sept. 5, noon	Erecting water tank and tower, gasoline engine, pump and pump house, piping, etc., for County jail.	S. R. McKay, County Clerk.
North Dakota	Bottineau	Sept. 5	Bldg. 24-in. deep well, also 36-in. deep well.	D. R. Carlson, City Auditor.
New York	Niagara Falls	Sept. 6, 3:30 p.m.	Bldg. meter house, Sugar St. and Packard Rd.	Thos. H. Hogan, City Clerk.
Oklahoma	Arapaho	Sept. 6, 8 p.m.	Furn. all material for w. w. and electric light system.	Fred B. Gallion, City Clerk.
Wisconsin	Waterloo	Sept. 6, 7:30 p.m.	Bldg. reservoir concrete foundation for steam pump, lay 18,000 ft. 4, 6, 8 and 10-in. water mains, set hydrants, etc.	P. E. Peschel, Village Clerk.
Mississippi	Cleveland	Sept. 6, 3 p.m.	Bldg. complete water works plant for town.	X. A. Kramer, C.E., Magnolia.
Iowa	Pella	Sept. 6, 6 p.m.	Combined water and light plant; 18,000 ft. 10-in. pipe, filter gallery, well, 2 bldgs., 2 a.c. generators, 2 motors, 2 engines, 2 pumps, 3 boilers, etc., Iowa Eng. Co., Clinton.	A. C. Kuyper, City Clerk.
Illinois	Kewanee	Sept. 6, 8 p.m.	Replacing water main.	O. D. Petersen, City Clerk.
Lyons		Sept. 8	Furn. and erecting deep well pump, motors, etc.	A. S. Dugen, Village Clerk.
Michigan	Grand Rapids	Sept. 8, 8 p.m.	Bldg. basins and substructures of bldgs. for filtration plant, inc. concrete covered basins, 75,000 sq. ft.; substructures 4,000 sq. ft., 35,000 cu. yds. earth excav.; 56 valves, 150 tons c.i. pipe and specials.	S. A. Freshney, Gen. Mgr. B. P. W.
Connecticut	New Haven	Sept. 8	Bldg. earth dam with concrete core wall and spillway.	A. B. Hill, Engr., N. H. Water Co.
North Dakota	Carrington	Sept. 9, 7:30 p.m.	Extension of water mains.	City Clerk.
Illinois	Rossville	Sept. 9, 4 p.m.	Furn. deep well pump, boilers and pump house; cost \$6,000.	G. H. Prellaman, Pres. Bd. Trus.
Colorado	Greeley	Sept. 10, noon	Improvement, Lower Latham reservoir.	P. S. Hartung, Opera House Bldg., Eng.
Iowa	Anamosa	Sept. 10	Drilling wells at county farm.	Louis Gardner, Co. Aud.
Maine	Portland	Sept. 12, noon	Furn. and lay 14 miles of pipe from basin near Lake Lebagto to Portland; 75,700 ft. 48-in. steel pipe; 21,600 tons c.i. pipe, 300 tons specials, Hazen and Whipple, New York City.	L. B. Griffin, Chm. Trus. Water Dist.
Quebec	Montreal	Sept. 14	Furn. and lay 3,200 ft. 6 ft. steel pipe in river, bldg. concrete pier, dredging, etc., in River at entrance to aqueduct.	L. N. Senecal, Sec'y Bd. City Comrs.
Kansas	Oakley	Sept. 14	Bldg. water works; Burns & McDonnell, K. C., Mo., Engineers.	J. M. Owen, Mayor.
Illinois	Toulon	Sept. 15	Furn. and erect 50,000 gal. steel tank and tower.	Arthur Shinn, City Clerk.
Ohio	Newburg	Sept. 17	Bldg. water mains in 3 streets; sewers in 3 streets.	Wm. H. Evers, Eng. Co., Anale, Cld.
Michigan	Detroit	Sept. 20, noon	Bldg. and erecting 25,000,000 gal. pumping engine.	B. F. Guiney, Sec'y Bd. Wt. Comr.
Maryland	Ft. Howard	Sept. 26	Bldg. 3 rein. concrete cisterns and piping, etc.	Constructing Quartermaster.
Indiana	Evansville	Sept. 29, 10 a.m.	Furn. and erect 2 steam-driven pumps or pumping engines, 12,000,000-gal., lift 13 to 62 ft.; bids wanted on all types.	H. L. Heilman, Sec'y Water Board.
BRIDGES				
Ohio	Akron	Sept. 2, 11 a.m.	Repairing Portage street bridge at Cuyahoga Falls.	C. L. Wirth, County Clerk.
Ohio	Cincinnati	Sept. 2, noon	Bldg. bridges and approaches, Briery creek road, Green twp.	Fred Dreih, Clk. Co. Comrs.
Illinois	Chicago	Sept. 2	Bldg. 2 center locks State st. bridge, repair other bridges.	B. J. Mullaney, Comr. Pub. Wks.
Ohio	Defiance	Sept. 2, 2 p.m.	Concrete wall for bridge, Washington Twp.	S. I. Gruner, County Auditor.
Ohio	Greenville	Sept. 3, 11 a.m.	Bldg. Somer's bridge.	E. K. Lott, Clk. Bd. Co. Comrs.
Indiana	Ft. Wayne	Sept. 3	Bldg. \$35,000 concrete or steel bridge at Tenn. ave. exten.; also concrete culverts, abutments, etc., repairing bridges, etc.	Geo. W. Lindemuth, Co. Auditor.
Ohio	Steubenville	Sept. 3	Bldg. bridge at Somers.	E. K. Lott, Clk. Co. Comrs.
Indiana	Tipton	Sept. 5, 10:30 a.m.	Constructing 5 bridges for Tipton County.	J. F. Barlow, County Auditor.
North Carolina	Edenton	Sept. 5	Bldg. 150-ft. bridge over Rocky Hock Creek.	W. J. Berryman, County Clerk.
South Carolina	Gaffney	Sept. 5	Rebldg. steel approaches on concrete base, repair bridge, etc.	E. Felix Lipscomb, County Superv.
Kansas	Leavenworth	Sept. 5, noon	Bldg. two bridges and replacing Bridge No. 20.	J. W. Niehaus, County Clerk.
Texas	Waco	Sept. 6	Bldg. 20-ft., also 7-ft. rein. concrete culvert, bridges and abuts.	P. A. Gorman, City Comr.
Pennsylvania	Pittsburg	Sept. 6, 2 p.m.	Filling approaches to bridges Nos. 1, 2 and 4.	R. J. Cunningham, Co. Controller.
Indiana	Marion	Sept. 6, 2 p.m.	Bldg. 4 concrete arches.	A. Y. Stout, County Auditor.
Indiana	Jasper	Sept. 6, 1 p.m.	Constructing 10 bridges for Dubois County.	M. A. Sweeney, County Auditor.
Ohio	Delaware	Sept. 6, noon	Bldg. Utley bridge in Trenton Township.	W. H. Bodurtha, County Auditor.
New York	Volney Center	Sept. 6, 10 a.m.	Bldg. 3 cement culverts; Eugene Rowe, Supervisor.	Town Clerk.
Pennsylvania	Washington	Sept. 6	Bldg. stone and concrete abutments, steel bridges, etc.	J. M. Moffett, County Controller.
Illinois	Kewanee	Sept. 6	Bldg. bridge in West Park.	O. D. Petersen, City Clerk.
Ohio	Dayton	Sept. 6	Bldg. 17 ft. span rein.conc. culvert.	E. A. Moritz, County Engineer.
Indiana	Crown Point	Sept. 7, noon	Bldg. wooden bridge over Deep river.	C. A. Johnson, County Auditor.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
BRIDGES (Continued)				
North Dakota	Williston	Sept. 7, 10 a.m.	Bldg. two 30, two 25 and three 20-ft. bridges, 16-ft. rdwy, etc.	Board of County Comrs.
Ohio	Ashland	Sept. 7	Bldg. two 60 ft. c. to c. steel truss bridges with concrete floor, complete; also 2 new substructures of stone and concrete footers, 150 perch stone.	T. Brindle, County Surveyor. Wm. Kohlman, County, Hwy. Engr.
Missouri	Carthage	Sept. 7, 1:30 p.m.	Constructing 4 bridges for county.	Jas. M. Norris, County Comptroller.
Pennsylvania	Wilkes-Barre	Sept. 8, noon	Bldg. rein. concrete viaduct approaches, 7 river piers and 6 steel river spans, electric wiring, etc., at Plymouth.	John T. White, County Auditor.
Indiana	Richport	Sept. 8, 1 p.m.	Constructing 7 bridges for County.	B. F. Herdrick, County Auditor.
Indiana	Lebanon	Sept. 8, 2 p.m.	Constructing 6 bridges for County.	State Comr. of Highways.
Maine	Augusta	Sept. 9, noon	Bldg. 762-ft. bridge over St. Johns river at Van Buren.	Arthur C. Lewis, County Auditor
North Dakota	Fargo	Sept. 9, noon	Bldg. 46 ft., 30 ft., and four 20-ft. bridges, steel culvert, and repair 60-ft. bridge.	Board of Supervisors.
California	Oakland	Sept. 12	Bldg. bridge near Brightside; cost \$10,700.	W. E. Hayes, City Clerk.
Iowa	Clinton	Sept. 13	Bldg. culvert or bridge at three sts, in Lyons.	F. M. Sayre, County Auditor.
Ohio	Columbus	Sept. 14	Encasing in concrete east abutment of Dublin bridge.	J. W. Hunter, State Hwy. Comr.
Pennsylvania	Harrisburg	Sept. 16, 2 p.m.	Bldg. 2 cement masonry and rein. concrete bridges.	F. Drehs, Clk. Bd. Co. Comrs.
Ohio	Cincinnati	Sept. 16, noon	Bldg. concrete bridge over Toad Creek.	R. J. Maquin, City Clerk.
Louisiana	Thibodaux	Sept. 23	Installing electric light plant; bldg. \$4,000; mach., \$35,000.	
LIGHTING AND POWER				
North Dakota	Edgeley	Sept. 2	Bldg. addition to electric lighting plant.	J. E. Bowen, Village Clerk.
Illinois	Belleville	Sept. 3	Lighting sts., pub. bldgs., etc., for 10 yrs. from Oct. 1, 1910. 330 arc lamps of 2000, c.p. now in use.	G. H. Beineke, City Clerk.
Illinois	Princeville	Sept. 3	Municipal light plant; will grant franchise.	Village Clerk.
Indiana	Greenfield	Sept. 6	Furnishing 150 to 175 h.p. engine and 150 kw. generator.	Ora Myers, Mayor.
Washington	Tacoma	Sept. 6	Bldg. \$104,000 substation for Nisqually power plant.	H. F. Gronen, Ch. Engr., Lt. & P. Com.
Oklahoma	Arapaho	Sept. 6, 8 p.m.	Bldg. electric light and water works systems.	M. C. Main, Mayor.
Iowa	Pella	Sept. 6	Bldg. light and water plant; transmission line, city lighting, lines, lamps, etc., 3 boilers, 2 pumps, 2 motors, 2 a.c. generators, engines, pipe, etc., Iowa Eng. Co., Clinton.	A. C. Kuyper, City Clerk.
Indiana	Peru	Sept. 7, 2 p.m.	Furnishing gas and electric fixtures for new Court House.	Bd. Comrs. of Miami County.
Prince Edw. Id.	Charlottetown	Sept. 10	Supplying city with electric light for street and commercial purposes; state rates and the cap. per lamp for each.	W. W. Clarke, City Clerk.
Massachusetts	Boston	Sept. 12, noon	Lighting sts. and alleys with gas incandescent mantle burners for 2 years, beginning Feb. 1, 1911.	L. K. Rourke, Supt. of Streets.
Kansas	Oakley	Sept. 14, 3 p.m.	Bldg. electric light plant.	J. A. Switzer, City Clerk.
MISCELLANEOUS				
Ohio	Youngstown	Sept. 2, noon	Bldg. comfort stations in two parks.	L. Evans, Supt. of Parks.
Florida	Pensacola	Sept. 2, 6 p.m.	Collection and disposal of garbage for 1 year from Oct. 1.	L. G. Aymard, Clk. Bd. Pub. Wks.
Massachusetts	Boston	Sept. 2, noon	Bldg. stone wharf, Pier No. 6, South Boston, 1,200 ft. long, 300 ft. wide, inc. 414,600 cu. yds. dredging, 274,600 cu. yds. fill; furn. 94,000 cu. yds. gravel, 40,200 cu. yds. rip-rap and stone ballast, 1,295 spruce piles, 730 cu. yds. concrete, 45,750 cu. yds. stone masonry below and 14,100 above low water, 95 lin. ft. bulkhead, 2,700 lin. ft. fenders on face of wall.	State Bd. Harbor Comrs.
Dist. of Col'bia	Washington	Sept. 3, noon	Furn. and placing rip-rap or cobblestone on seawall Anacosta riv.	W. C. Langfill, Col. U. S. Engrs.
Arkansas	Ft. Smith	Sept. 5	Furn. 1000 ft. fire hose.	W. J. Johnston, Mayor.
Minnesota	Virginia	Sept. 5	Furnishing ten fire alarm boxes.	A. E. Bickford, Sec'y Fire Com.
Kansas	Olathe	Sept. 5	Erecting City bldg., Fire Dept. and jail bldg.	L. R. Sykes, City Clerk.
Indiana	Bloomfield	Sept. 5	Remodeling heating plant in Court House, new plant for jail.	P. M. Cork, County Auditor.
Ohio	Cincinnati	Sept. 6, noon	Furn. underground cable for signal and telephone circuits of Fire Dept.; \$500 bond.	Elmer G. Prior, Sec'y Dir. Pub. Sfty
Indiana	Mishawaka	Sept. 6, 6 p.m.	Bldg. 2-story brick hose house; \$500 check.	James L. Kennedy, City Clerk.
Pennsylvania	Butler	Sept. 6, 8 p.m.	Installing modern fire alarm system in Borough.	H. E. Coulter, Sec'y Town Council.
New York	St. George, S. I.	Sept. 6, noon	Erecting Engineer's house at garbage destructor.	Geo. Cromwell, Boro. President.
New York	Albany	Sept. 6, 3 p.m.	Bldg. new fire-truck house at Marshall st. and Del. ave.	M. T. Reynolds, Arch., 100 State st.
Oklahoma	Tulsa	Sept. 6	Sketch plans, etc., for \$200,000 County Court House and Jail.	County Clerk, Tulsa County.
Wisconsin	Racine	Sept. 6, 5 p.m.	Bldg. 25-ton incinerator, housed in fireproof bldg.	Leslie M. Fowler, City Clerk.
Illinois	Cairo	Sept. 6, 7:30 p.m.	Repairing fire stations Nos. 1 and 2.	E. Nordman, City Comp.
Maryland	Baltimore	Sept. 7, 11 a.m.	Constructing coal and ash handling plant in sewage pumping station.	G. N. Numsen, Pres. Bd. of Awards.
Ohio	Rocky River	Sept. 9	Erecting municipal bldg., M. M. Gleishmann, Cleveland, Arch.	W. M. Dean, Village Clerk.
California	Santa Ana	Sept. 10, 11 a.m.	Repairing detention home.	County Clerk.
Florida	Ft. Barrancas	Sept. 12, 11 a.m.	Bldg. fire station at post.	Constructing Quartermaster.
Iowa	Des Moines	Sept. 12, 9 a.m.	Extensive river improvement for flood protection along Des Moines and Raccoon rivers; 650,000 cu. yds. excav.	Neal Jones, City Clerk.
New Jersey	Camden	Sept. 12	Enclosing cell fronts with wire, also top and enclosure in rear of cells at County Jail.	David Rankin, Chm. C. H. Com.
Iowa	Marengo	Sept. 14	Bldg. County Home, and building, sewerage, plumbing, etc. and isolated electric light plant.	C. F. Chandler, County Auditor.
West Virginia	Wheeling	Sept. 15, 11 a.m.	Bldg. 3 concrete ice piers in Kanawha river.	F. W. Altstaetter, Capt. U.S. Engrs.
West Virginia	Wheeling	Sept. 16, 11 a.m.	Bldg. lock and dam No. 12, Ohio river, also lock and guide walls bear trap weirs and Chanoine weir, Dam 19.	F. W. Altstaetter, Capt. U. S. Engrs.
Louisiana	New Orleans	Sept. 19, 11 a.m.	Bldg. rein. concrete sea wall on pile foundation, 2,700 ft. long and 14 ft. high, Lake Pontchartrain, also for filling in with earth dredged from lake, 400,000 cu. yds. behind wall.	C. R. Kennedy, City Comptroller.
Indiana	Huntington	Sept. 19, 10 a.m.	Improving county jail.	J. W. Weaver, County Auditor.
Texas	El Paso	Sept. 20, 10 a.m.	Bldg. complete garbage, refuse and sewage disposal plant; capacity of refuse distributors, 3 tons per hour; sewage plant, 3,000,000 gals. daily; Pub. Wks. Eng. Co., Beck bldg., Portland, Ore.	C. W. Fassett, City Clerk.
Washington	Aberdeen	Sept. 28, 5 p.m.	Clearing 250 acres, filling 1,500,000 cu. yds., construct. 4,000 ft. drain for improving tide lands.	P. F. Clark, City Clerk

STREET IMPROVEMENTS

Linden, Ala.—Marengo County will vote in November on \$175,000 bonds for road construction.

Ocean Park, Cal.—Board of City Trustees has authorized the grading, paving and curbing of Club House blvd. and Thornton st., including cement curbing.

Sacramento, Cal.—Surveyor Phinney has estimated cost of oil for roads and for river levees as follows: Upper Stockton road, \$30,000; Upper Stockton blvd., \$20,700; Riverside road, \$2,700; Jackson road, \$11,400; Placerville road, \$2,000; Lower Stockton road, first section, \$3,566.45; second section, \$5,909; third section, \$1,215.50; river levees, under contract, \$17,000; repairs to oil wagons, \$1,500; total, \$102,920.95; more is to be added to this estimate.

La Junta, Col.—Otero County Commissioners have decided to improve road between Fowler and Rocky Ford.

Hartford, Conn.—Plans for proposed

State road work have been received by the State Highway Commissioner from Engineer F. J. Kellogg, for 20,750 lin. ft. on the Danbury-Norwalk road in town of Danbury; from Engineer A. B. Alderson, 4,912 lin. ft. on River road in the town of Burlington; from Division Engineer E. C. Welton, 10,000 lin. ft. on Stafford turnpike in the town of Somers, 7,300 lin. ft. on the Hartford turnpike in the town of Vernon, and 3,000 lin. ft. on Hartford-Willimantic turnpike in the town of Bolton.

Washington, D. C.—American Consuls in Africa and India report the extensive use of steam rollers for road making in those countries, and suggest that American manufacturers of road-making machinery get in touch with those whose names are in the report; the 8 and 10-ton apparatus are the sizes more commonly used.—Address No. 5394, Bureau of Manufactures.

Lakeland, Fla.—Ordinance has been passed by Council requiring all property owners on large percentage of streets and

avenues of city to lay sidewalks of either cement or hexagon blocks.

St. Petersburg, Fla.—Numerous resolutions for street paving and sidewalk laying have been passed by Council.—W. B. Pope, Acting President.

Wewahitchka, Fla.—A. Pick Higgins is getting up petition to call election to assess 5-mill tax for good roads in this end of county.

Moline, Ill.—Rural Roads Committee has secured \$18,000 from citizens for six-mile macadam road to connect Rock Island, Davenport and Moline with Knoxville turnpike.

Nokomis, Ill.—Bids will be received about Sept. 15 for vit. brick paving; cost about \$50,000.—John M. Shoemaker, Clerk Board of Local Improvements.

Upper Alton, Ill.—Board of Trustees has passed ordinance for paving Brown st. with brick; cost \$41,935; also to construct 28,500 sq. yds. of brick pavement and 13,700 lin. ft. combined curb and gutter; cost \$63,325.—

B. B. Stakemiller, Commercial Bldg., Alton, Civil Engineer.

Decatur, Ind.—Council has ordered plans and specifications prepared for paving about three miles of streets with brick.

Evansville, Ind.—Board of Public Works has ordered construction of concrete pavements on number of streets.

South Bend, Ind.—Residents of Portage ave. have filed petition with Board of Public Works for gravel road on Portage ave.

Council Bluffs, Ia.—Council is discussing repaving of West Broadway.—S. L. Etnyre, City Engineer.

Hampton, Ia.—All bids opened Aug. 1 for 19,000 sq. yds. paving have been rejected; paving will be postponed until next year.

Paducah, Ky.—On August 23 all bids on contracts A, B, D and E were rejected; bids will again be opened Sept. 5, 3.30 p. m.—L. A. Washington, City Engineer.

Donaldsonville, La.—City is considering laying about 15 miles of concrete sidewalks. **Whitehall, Md.**—As an experiment 800 ft. of concrete road will be constructed at Whitehall.

Gloucester, Mass.—Proposed plans maturing. Park Commissioners will be able to build granolithic walk from Blynman Bridge to Stage Fort Park.

Medford, Mass.—City will lay about 4,000 sq. yds. asphalt paving.—Clifford M. Brewer, Mayor.

Melrose, Mass.—Plans for extension of the Lynn-Fells blvd. from Green st. to Bellevue st. are rapidly being completed; work on the project will probably be started within two weeks.

Campbell, Minn.—Bids will be received by Julius Schendel, Village Clerk, for constructing sidewalks and cross walks.

Crookston, Minn.—Paving plans of City Engineer Carroll have been approved and bids will be called for at the next meeting.

Moss Point, Miss.—City will issue \$15,000 of street improvement bonds.—C. M. Fairley, City Clerk.

St. Joseph, Mo.—Buchanan County Court is considering building four-mile road north of Saxton.

Hastings, Neb.—Paving of Bellevue ave. is being considered.

Elizabeth, N. J.—Council is considering ordinance for issuance of \$30,000 bonds for repairs to macadam and telford paved streets.—Victor Mraviag, Mayor.

Jersey City, N. J.—Street and Water Board has voted to ask Board of Finance for \$6,000 to pay for asphalt of Bergen ave.

Niagara Falls, N. Y.—City Engineer McClanathan has estimated cost of paving alley between 3d and Little 4th sts. at \$1,591.55; 11th st. \$20,393.73 for paving, \$2,391.27 for intersections, and \$61.51 for inspection; asphalt will be used to pave Buffalo ave. from Sugar st. to the city line, excepting between track and 2 ft. on outside, which will be paved with brick.

Akron, O.—Resolutions have been adopted for South Main st. improvement, 1½ miles of brick paving, 14 ft. wide; cost \$25,000; County Commissioners will advertise for bids at once.

Canton, O.—New bids are to be asked by the County Commissioners for constructing one mile of road between Canton and New Berlin.—Jas. C. Wonders, Columbus, State Highway Commissioner.

Cincinnati, O.—Public Service Director J. H. Sundmaker has taken up with City Engineer Shipley and City Chemist Wehmer question of the supply of wood block to be used on various streets.

East Liverpool, O.—Paving of Bradshaw ave. about three-quarters of a mile, 60 ft. in width, is being considered.—Alex. McBane, Director Public Service.

Hamilton, O.—County Commissioners have approved plans of Ohio State Board of Public Works for two miles of the Columbia bridge road leading from this city to Venice.

St. Bernard, O.—Village Council has decided to lay cement sidewalk on Spring Grove ave., to have plans prepared for improving Beech st. with macadam and cement sidewalks and to receive bids for grading park property.

Steubenville, O.—City proposes to pave Penn ave. with brick; cost \$16,000.—Hugh W. Patterson, City Auditor.

Duncan, Okla.—Stephens County will vote Nov. 8 on \$20,000 bonds for road improvements.

Guthrie, Okla.—City is considering laying 8,000 lin. ft. of cement sidewalks.

Salem, Ore.—Bids have been rejected for construction of Silverton-Marquam road, and new ones will be asked.

Erie, Pa.—Site at 20th and French sts. will be purchased for proposed asphalt plant.

McKeesport, Pa.—Fifth ave. between the Fifth ave. bridge and Huey st. will be improved in near future.

Warren, Pa.—State Highway Commission will soon ask bids for constructing a

macadam roadway in Pine Grove Township, Warren County.

Greenville, S. C.—Council has decided to pave 12,000 yds. of side streets with bitulithic and block of Buncombe st. with asphalt.

Chattanooga, Tenn.—McCallie ave. will be paved.

Rogersville, Tenn.—Hawkins County Court has decided to expend \$10,000 for purpose of macadamizing the road from Caney Creek to Alum Well.

Memphis, Tenn.—City Commissioners have adopted ordinances providing for paving of Walker, Manassas, South Cooper, Olive and other streets.—Heiskell Weatherford, City Engineer.

Ballinger, Tex.—Runnels County will vote on \$60,000 bonds for road improvements in Precinct No. 1.

Edna, Tex.—Jackson County Commissioners have voted \$100,000 bonds for road construction and system of drainage.

Houston, Tex.—New bids will be received for paving of Main st. by County Commissioners.

Marshall, Tex.—City Commissioners have decided to buy oil for use on square at 8½c. and will be used in surfacing square after it is paved.

San Marcos, Tex.—Road Precinct No. 1 of Hays County will vote Oct. 18 on \$20,000 road and bridge bonds.

Sweetwater, Tex.—Commissioners' Court has ordered election Sept. 24 on \$100,000 bonds for improving different roads leading out of city.

Norfolk, Va.—Board of Control has requested City Engineer W. T. Brooke to prepare specifications and proposals for paving of Hanover and Main sts. under appropriations of \$2,076.50 and \$5,929, respectively.

Huntington, W. Va.—To ascertain what it will cost to change the line of the 20th st. road leading to Spring Hill Cemetery, so as to follow the line of the street car company and thus secure a grade that will not be so steep as the present road, the Board of Commissioners has instructed the City Engineer to prepare plans and estimates for changing the road.

Milwaukee, Wis.—Comprehensive plan which may result in eventual boulevarding of all and parking of wide residence streets has been favorably considered by Council Committee on Streets and Alleys.

Ottawa, Ont., Can.—Council is considering widening of Wellington st. in Hintonburg at estimated cost of \$18,000.

CONTRACTS AWARDED

Decatur, Ala.—Macadam roads, to A. G. Patterson, Falkville, 1½ miles; Goodrick & Crinkley, New Decatur, Ala., 5 miles; prices on both jobs, earth excavation, 25c. per cu. yd.; macadam, \$1.75 per cu. yd.; dry masonry rock, culverts, \$4.50 per cu. yd.; concrete, \$8 per cu. yd.; total cost, \$23,274.

Los Angeles, Cal.—Constructing two sections of Foothill blvd. in the vicinity of San Dimas, to Rife & Cave, on recommendation of the Highway Commission, \$17,267 for grading and \$148 a ton for laying macadam on one section and \$15,155 for grading and \$153 a ton for laying macadam on the other section; 10,164 tons of rock will be required on one section and 10,403 tons on the other; entire bid aggregates more than \$63,000.

San Bernardino, Cal.—To Highway Construction Co., for paving with macadam on H and Court sts., \$21,577 and \$4,534, respectively.

Middletown, Conn.—To A. Brazos & Sons, city, for macadamizing road at Branford, and for grading the Woodstock road.

New Britain, Conn.—To Warren Bros. Co., Boston, Mass., for paving railroad area on Main st., 4,510 sq. yds., with bitulithic.

Wilmington, Del.—Building five stretches of county roads, to Horrigan Contracting Co.; State road from Hare's Corner, 9,550 ft., \$19,000; Telegraph road from Newark to State line, \$14,598; Lore ave., \$5,024.74; Lancaster pike, to Hockessin, \$37,990; to Corcoran Construction Co.; Horrigan Contracting Co. was the lowest bidder for road from St. Georges to Delaware City, but contract was not awarded.

Batavia, Ill.—Macadam paving, 26,612 sq. yds., 6,856 lin. ft. of combined curb and gutter and necessary drainage changes from plans prepared by Edgar K. Wilson, Consulting Engineer, Sherwin Block, Elgin, to Interocan Paving and Construction Co., 108 Dearborn st., Chicago, \$24,875; other bidders, John A. McGarry Co., Chicago, \$25,560; A. E. Rutledge, Chicago, \$25,675; George A. Peters, Sycamore, \$26,157.

Chicago, Ill.—To Jas. A. Guckley Co., Chamber of Commerce Bldg., for furnishing and delivering 5,000 cedar blocks for paving purposes at the various ward yards in city, 37c. per sq. yd.; to Douglas A. Myers, 209 W. Armstrong ave., Peoria, for paving roadway of Meyer ave. with brick pavement 30 ft. wide; work includes the following approximate quantities: 920 cu.

yds. excavation, 30 lin. ft. stone protection, 4-in. x 14-in., 1,646 lin. ft. cinder foundation under cement curb, 6-in. x 12-in., 1,646 lin. ft. Standard No. 1 cement curb, 2,743 sq. yds. concrete foundation, 5-in., 2,743 sq. yds. sand cushion, 2-in., 2,743 sq. yds. brick pavement, 2,743 sq. yds. sand filler, ½-in.

Chicago, Ill.—Board of Local Improvements has awarded contracts for paving Sibley st. and Gilpin pl. to Parker-Washington Co., and portions of Park ave. and Washington st. to B. F. Conway Co.

Dixon, Ill.—To Wm. Rink, Jr., to pave with macadam portions of Hennepine ave., 82c. per sq. yd. for macadam with binder and the same for concrete driveways and 35c. per lin. ft. for curb.

Watseka, Ill.—Paving 3d st., 3d st. S. and Mechanics st., to J. H. Palmer, Danville, \$5,840, \$12,750 and \$4,500, respectively.

Bluffton, Ind.—Risley stone road, to Abe Heshner, \$5,550; other bidders, L. O. Bears, \$5,799; Woodward Bros., \$5,937; A. P. Tabor, \$7,417; A. P. Addington, \$5,950; Nash & Woodward, \$6,144; I. J. Wolfcale, \$6,997; Reeser & Maner, \$7,250; Dan O. North, \$6,572; Weisbrodt Stone road, Abe Heshner, \$5,000; other bidders, L. O. Bears, \$5,749; Woodward Bros., \$5,489; A. P. Tabor, \$6,579; A. P. Addington, \$5,700; I. J. Wolfcale, \$5,993; Reeser & Maner, \$6,492; Dan O. North, \$5,982; Ellick Stone road, to Jackson & McCarty, \$4,680; other bidders, Woodward Bros., \$4,773; Nash & Hoover, \$4,994; I. J. Wolfcale, \$5,175; Reeser & Maner, \$5,268; Abe Heshner, \$4,860; Dan O. North, \$5,363.

Valparaiso, Ind.—To Acerman & Co., Laporte, to construct three miles of gravel road, \$11,000.

Leavenworth, Kan.—Paving Santa Fé st., to E. W. Geiger, grading 35c. per cu. yd. and paving \$1.05 per sq. yd.; also contract for regrading and paving of Osage st., 40c. per cu. yd. for grading and \$1.47 per sq. yd. for paving; grading and curbing of Terrace road, to Thomas Jones & Son, 37c. per lin. ft. for curbing, and 29c. per cu. yd. for grading; O. C. Chapin was awarded the contract for paving north and south alley in Block 15, Fackler's addition 45c. per cu. yd. for grading and \$1.04 per sq. yd. for paving.

Louisville, Ky.—Paving two blocks on Lee ave., to Marion County Construction Co., \$1.95 per sq. yd.; work will cost about \$9,900.

Boston, Mass.—Constructing a section of road in the towns of Chelmsford and Tynesboro, distance about 5,055 ft., to H. W. Tarbell, Lowell, \$8,719; other bidders: H. M. McBride, Brighton, \$9,830; J. E. Walkins, Amesbury, \$9,406; J. A. Gaffey, Medford, \$10,084; Thos. Fitzgibbons, Beverly, \$9,514; C. O. Cressey, Gloucester, \$10,712; H. S. Thomas Middleboro, \$9,883; Lane Construction Co., Meriden, Conn., \$9,670; R. maeo & De Styhano, Medford, \$11,237; F. E. Ellis, Medford \$11,462; Harvey W. Tarbell, Lowell, \$8,719.

Holland, Mich.—Paving W. 8th st. with Bessemer brick, cement and asphalt fill, to C. Marsman, Grand Rapids, \$21,724.

Monroe, Mich.—Contract for about 11,000 yds. pavement, to Asphalt Block Pavement Co., Toledo, O., \$31,049.

Saginaw, Mich.—Building 9-ft. macadam road on Genesee ave., to Crowley Bros.

St. Paul, Minn.—Paving 7th st. from Pine st. to Brook st., 5,400 sq. yds. of sandstone block, to Fielding & Shepley, city, \$17,640.

St. Louis, Mo.—Construction of 42 streets: Improving with vit. paving brick, Pacific, to Hiram Lloyd Building and Construction Co., \$1,569.78; Arsenal, to Webb-Kunze Construction Co., \$37,183.80; Minnesota, to Ruecking Construction Co., \$8,362.52; 21st, to Daniel Murphy, \$12,768.74; McRee, to Fruin-Bambrick Construction Co., \$37,186.30; Lemp, to Ruecking Construction Co., \$6,168.30; 21st to Daniel Murphy, \$10,359.02; Bulwer, to Daniel Murphy, \$10,456.25; Victoria, to Hiram Lloyd Building and Construction Co., \$13,685.38; Duncan, to Fruin-Bambrick Construction Co., \$8,995; Alaska, to Ruecking Construction Co., \$15,778; Compton, to G. Eyermann & Bro., \$5,905.28; Idaho, to G. Eyermann & Bro., \$27,232.68; Juniata, to Hiram Lloyd Building and Construction Co., \$19,526.20; Alabama, to Hiram Lloyd Building and Construction Co., \$9,724.50; 23d, to Daniel Murphy, \$2,793.99; Maiden lane, to Daniel Murphy, \$5,198.35; Natural Bridge, to Fruin-Colon Contracting Co., \$27,412.80; St. Louis, to Hiram Lloyd Building and Construction Co., \$10,754.96; Greer, to Bambrick Bros. Construction Co., \$4,243.86; Minnesota, to Eyermann & Bro., \$6,705.96. For reconstructing following streets with vit. paving brick: Natural Bridge road, from Grand to Spring, to Fruin-Colon Contracting Co., \$4,172.70; Glasgow, to Harry F. Heman, \$17,952.95; 20th, from Washington to O'Fallon, to James E. Perkinson, \$24,890.46; 20th, from Cass to Branch, to Skrainka Construction Co., \$52,255.90; 20th from Branch to Salisbury, to William H. Redemeyer, \$11,259.90. For im-

proving following streets with bitulithic: Arsenal, to Granite Bituminous Paving Co., \$25,294.68; Portis, to Granite Bituminous Paving Co., \$9,512.21; Bent, to Granite Bituminous Paving Co., \$13,505; Semple, to Granite Bituminous Paving Co., \$21,272.24; Union, to Granite Bituminous Paving Co., \$27,650.79. For reconstructing following streets with Southern long-leaf yellow-pine blocks: McPherson, to G. Eyermann & Bro., \$27,466.43; 12th, from Franklin to Tyler, to G. Eyermann & Bro., for \$25,437.74; 12th, from Tyler to Hebert, to Granite Bituminous Paving Co., \$31,168.40; contractors all of St. Louis; total nearly \$600,000; work is under supervision of Street Commissioner Travilla.

Webb City, Mo.—To Webb City Paving and Improvement Co., to curb, gutter and lay cement sidewalks on North Webb st., and to Lloyd Burriss, Joplin, for brick paving of alley between Daugherty and John sts.—W. E. Smith, City Engineer.

Bayonne, N. J.—Laying 16,150 sq. yds. of bitulithic on Prospect ave., to Standard Bitulithic Co.

Woodbury, N. J.—Constructing Swedesboro and Auburn road, to Filbert Paving and Construction Co., 904 Pennsylvania Bldg., Philadelphia, Pa., \$42,105.

Buffalo, N. Y.—To Gentile & Cervi and Liberty Paving Co., to construct concrete walks required during the remainder of the year, 9c. per sq. ft.; total cost within \$15,000.

Herkimer, N. Y.—To Warren Bros. Co., Boston, Mass., paving Main st. with bitulithic pavement, 11,451 sq. yds.

Rochester, N. Y.—To John Petrossi Co., for sewer, sidewalk and a change of grade on Seward st., \$2,379.

Syracuse, N. Y.—To Central Paving Co., for paving Lincoln ave. with asphalt, \$10,363; same company will pave Prospect ave. with asphalt, \$4,404.80; to F. J. Baker, for paving Park ave., from Sackett st. to Lakeview ave., with asphalt, \$9,148.35, and Park ave., from Liberty st. to Sackett st., with asphalt, \$6,981.85.

Akron, O.—Improvement of East Market st. and Kenmore Roads to Wildes and Davidson; contract calls for stone curbing and on the East Market st. improvement \$15,515.25; on Kenmore Road, \$35,588.04 on two and five-eighths miles of paving.

Ashland, O.—To D. A. Phillips, to pave Broad st., about \$9,575.

Ashtabula, O.—To Thos. Fitzgerald, city, to pave Main and Lake sts. with Bessemer brick; total cost of about \$60,000.

Cincinnati, O.—Bid of Kirschner Construction Co. for improvement of Woodward st. declared the best of three bidders for the work, \$5,039.50.

Cincinnati, O.—To Kirschner Construction Co., for improvement of Young st., between Doman and Southern aves., with macadam, \$21,013.11.

Dayton, O.—Setting 710 lin. ft. cement concrete sidewalks, to Hecker & Kirchner, 40c. per lin. ft. for curbing only; contract also included grading and graveling roadway and sidewalk paving; bidders were as follows: Hecker & Kirchner, \$935.85; Wm. H. Boyd, \$1,340.95; William Anderson, \$1,427.21; Bair & Rhodes, \$1,437.28; Redder & Miller, \$1,566.25; Clifton Hoolihan, \$2,231; cement sidewalks, to Clifton Hoolihan, 3,000 sq. ft., concrete foundations, 10c. per sq. ft.; other bidders, Hecker & Kirchner \$330, and E. Kisen, \$350.—E. Staackelm, Clerk.

Eaton, O.—Paving Main st. east of the Panhandle tracks to George F. Poos, city, \$13,156.60.

Massillon, O.—Constructing culvert through City Hall Park, to Urban & Schott, at \$764.

Portsmouth, O.—To Kelly Bros., city, to construct sidewalks for Baltimore and Ohio Southwestern Railroad on Market st.

Youngstown, O.—Paving Caroline st. to Turner & Olson, \$5,072; sewerage of McKinnie st., to Miller Bros., \$1,957.40; sewerage of Japan st., to Hannon Bros., \$743.80; grading Quarry st., to S. H. De Groodt, \$1,140; grading Decatur st., to S. H. De Groodt, \$547; grading Pyatt st., to James McCarron, \$1,660.

Muskogee, Okla.—Paving 9th, Fremont and Elgin sts. with Trinidad asphalt, to Phoenix Construction Co., Kansas City, Mo.

Cottage Grove, Ore.—Paving Main st. with bitulithic pavement, 7,200 sq. yds., to Warren Construction Co.

Dalles City, Ore.—Paving 4th st. with bitulithic, 13,830 sq. yds., to Warren Construction Co., Boston, Mass.

Portland, Ore.—Paving with bitulithic 74,474 sq. yds., to Warren Construction Co., Boston, Mass.

Salem, Ore.—Bitulithic paving, 31,903 sq. yds., to Warren Construction Co.

Woodburn, Ore.—Paving Hayes and 1st sts. with bitulithic, 8,526 sq. yds., to Warren Construction Co.

Sherman, Tex.—To Dennis McNerney, to improve a road in Denison Road Improvement District; cost about \$250,000.

Norfolk, Va.—To W. P. Oberndorfer & Co., to furnish 200,000 vit. brick for sidewalk repairs, \$16 per M.

Chehalis, Wash.—Laying about 24,557 sq. yds. bitulithic, to Warren Construction Co., Boston, Mass.

Cheney, Wash.—Improvement work on 7th st., to H. I. Stanley, Hope, N. D., \$6,000.

Puyallup, Wash.—To Warren Construction Co., Boston, Mass., for paving Improvement District No. 18 with bitulithic, 8,198 sq. yds.

Seattle, Wash.—To W. F. Manney & Co., 7009 17th N. W., for the grading and curbing of N. 82d st. et al., at \$25,928; to Geo. Hanson, 801 6th ave., for the grading and curbing of 18th ave. N. E. et al., at \$22,225.50; to Agutter-Griswold Co., Mfg. Exchange Bldg., for the installation of cluster lights on Jackson st. from Railroad ave. to 31st st. S., subdivision No. 1, at \$34,946.77; to P. J. McHugh, 3d ave. N. and Mercer st., for the paving of 9th ave. from Howell to Virginia sts., at \$11,962.02; to W. F. Manney & Co., for the grading and curbing of N. and W. 76th st. et al., at \$24,614.70.

Chippewa Falls, Wis.—To the Concrete Co., for building cement sidewalk on Bridge st.

Superior, Wis.—To Differ & Riches, for paving of north and south alley between Broadway and 11th st., \$688.69; to John O. Anderson & Co., for grading contracts on bid of 49c. per cu. yd.

Berlin, Ont., Can.—To Warren Bituminous Paving Co., Boston, Mass., for paving with bitulithic King st. and Young st., 7,733 sq. yds.

Moose Jaw, Sask., Can.—Furnishing material and constructing about 63,000 sq. ft. concrete walks, 9,000 lin. ft. curb and gutter, 6,000 sq. ft. concrete crossings, 6 miles wooden walks, to R. L. Frost, city, \$15,330.

New Westminster, B. C., Can.—Paving another stretch of Columbia st., to Hassam Paving Co., \$62,800; Warren Construction Co., Ltd., \$63,114; R. C. Blome Granitoid Co., \$64,000, and the M. P. Cotton & Co., Ltd., \$68,152.

Toronto, Ont., Can.—Laying 6,077 sq. yds. bitulithic pavement to Warren Bituminous Paving Co., Boston, Mass.

Vancouver, B. C., Can.—To British Columbia Bitulithic Co., Ltd., for 52,126 sq. yds. bitulithic pavement.

BIDS RECEIVED

Hartford, Conn.—Town of North Branford, 15,327 lin. ft. of macadam-telford rd., 14 ft wide, including six 12-in., two 18-in., one 24-in., one 15-in. and one reinforced I-beam concrete culvert on the Middletown-New Haven turnpike: A. Brazos & Sons, Middletown, \$1.85 per lin. ft. for macadam, \$2.20 per lin. ft. for telford, 80c. per lin. ft. for rubble drain; Lawrence Bruce, North Haven, \$2.19, \$2.99 and \$1.50; F. Arrigoni & Bro., Durham, \$2.27, \$2.95 and \$1. Town of Durham, 18,237 lin. ft. macadam-telford road, 14 ft. wide, including three 12-in., three 18-in., two 15-in., one 20-in., two 24-in. and one 30-in. tile culverts and two reinforced I-beam concrete culverts, on the Middletown-New Haven turnpike: F. Arrigoni & Bro., Durham, \$2.27 per lin. ft. for macadam, \$2.95 per lin. ft. for telford, \$1 per lin. ft. for rubble drain; A. Brazos & Sons, Middletown, \$2.30, \$3.15 and 80c. Town of North Haven, three sections macadam-telford road, first section, 340 lin. ft., 14 ft. wide: Lawrence Bruce, North Haven, \$1.59 for macadam, \$2.59 for telford, \$1.55 for rubble drain; second section, 727 lin. ft., same contractor, \$1.97 for macadam, \$2.97 for telford, \$1.55 for rubble drain; third section, same contractor \$1.81 for macadam, \$2.81 for telford and \$1.55 for rubble drain. Town of East Haven, first section, 3,178 lin. ft. macadam-telford road, 14 ft. wide, on the Foxen road, including one 18-in. tile culvert: C. W. Tryon, Meriden, \$2.20 for macadam, \$2.75 for telford, \$1 for rubble drain; B. D. Pierce, Jr., & Co., Bridgeport, \$3.67 for macadam, \$4.20 for telford, \$1 for rubble drain; second section, 7,670 lin. ft. macadam-telford road on Thompson ave., Robert D. Daly, New Haven, \$1.49 for macadam, \$2.25 for telford; C. W. Tryon, Meriden, \$1.55 for macadam, \$2.25 for telford, \$1 for rubble drain; B. D. Pierce, Jr. & Co., Bridgeport, \$1.75 for macadam, \$2.49 for telford and \$1 for rubble drain. Town of Beacon Falls, 2,325 lin. ft. gravel-telford road, including three 15-in. and one 18-in. tile culverts: Merritt & Bush, Stamford, \$1.25 for gravel, \$2 for telford, \$1.25 for rubble drain, 6c. per cu. yd. for masonry; E. G. Pardee, Bethany, \$2.89 for gravel, \$3.54 for telford, 65c. for rubble drain, 6c. per cu. yd. Town of Bristol, 2,251 lin. ft. macadam-telford road including one 15-in. tile culvert: Pierson Engineering and Construction Co., Bristol, 98c. per sq. yd. for macadam, \$1.40 per sq. yd. for telford, \$2.85 per sq. yd. for brick work; Merritt & Bush, Stamford, \$1.05 per sq. yd. for macadam, \$1.40 for telford, \$2.90 for brick work. Town of Sherman, 6,785 lin. ft. graded telford road, including three 18-in., twelve

24-in., one 15-in. and two 20-in. tile culverts on the New Milford turnpike: Goodman & Trumbull, \$19,247.84 for grading, \$1 per lin. ft. additional for telford, \$1 for rubble drain, 60c. per sq. yd. for cobble gutters; A. Brazos & Sons, Middletown, grading, \$43,850, telford 40c. per lin. ft. additional, rubble drain \$1, cobble gutters 80c. per sq. yd. Town of Bridgewater, 11,835 lin. ft. graded telford road, including one 12-in., nine 15-in., four 18-in., one 20-in., six 24-in. and three 30-in. tile culverts. Goodman & Trumbull, Litchfield, \$25,240 for grading, with \$1 per lin. ft. extra for telford, rubble drain \$1 per lin. ft.; A. Brazos & Sons, Middletown, \$31,000 for grading, 40c. per lin. ft. extra for telford, \$1 for rubble drain; B. D. Pierce, Jr., Co., Bridgeport, \$33,000 for grading, 60c. for telford, \$1 for rubble drain. Town of Woodstock, 8,500 lin. ft. graded telford road, including one 20-in., one 15-in., one 12-in. and two 24-in. tile culverts: A. Brazos & Sons, Middletown, \$12,325 for grading, with 40c. per lin. ft. extra for telford, rubble drain 80c. per lin. ft.; A. Vito & Co., Thompson, \$15,775 for grading, 80c. extra for telford, rubble drain 85c. per lin. ft.; A. D. Bridge's Sons, Inc., Hazardville, \$16,235 for grading, 60c. per lin. ft. for telford, rubble drain \$1 per lin. ft.

Evansville, Ind.—Improving Chandler ave. with asphalt: Western Construction Co. bid \$1.95 a yd.; artificial stone curb and guttering, 44c.; marginal stone curb, 30c.

Cedar Rapids, Ia.—Cement sidewalks. F. J. Stodola, lowest bidder, 1½c. per ft.; all bids rejected as contractor failed to send in certified check.

Coleraine, Minn.—Construction of new concrete sidewalks and curb and gutter for five blocks on Cole ave.: lowest bidders are Hanson & Nelson, of Coleraine, at 9-4-9c. per sq. ft., or 85c. sq. yd. for walk and 52c. for curb and gutter.

Binghamton, N. Y.—Laying cement sidewalk and grading: E. L. Webster, sidewalk, \$167.50; grading, \$15; M. S. Hotchkiss, sidewalk, 9.8c. per sq. ft.; grading, \$36; F. S. Matthews, sidewalk, 10c. per sq. ft.; grading, \$15; I. S. Decker Co., sidewalk, \$169.27 or 9½c. per sq. ft.; grading, \$13.

Brooklyn, N. Y.—Furnishing materials and constructing steps and adjoining walks for the 5th ave. entrance to Sunset Park: Benisch Bros., 840 Jamaica ave., city, \$8,787; Cardo-Borgia Stone Co., 1133 Broadway, New York, \$8,631; Fox-Hennessy Co., 81 E. 125th st., New York, \$12,371; A. L. Guidone & Co., 162 E. 23d st., New York, \$11,496; Hagerty-Drummond Co., 41 Park Row, New York, \$10,050; Orr Bros., Review ave. and Young st., Long Island City, \$10,600; George W. Pratt, 141 Broadway, New York, \$8,636; Daniel J. Ryan, 723 3d ave., city, \$11,970.

Rome, N. Y.—Paving E. Willett st. and Elm st. Warren Bros. Co. was only bidder, \$3,188.40 for E. Willett st. and \$5,539.50 for Elm st.

New York, N. Y.—Reconstructing roadway of Bronx and Pelham Parkway, including surfacing with asphaltic mixture 17,800 sq. yds. from its junction with the Eastern boulevard to the crossing of the said parkway over the tracks of the N. Y. N. H. & H. R. R. (Harlem River branch), in Bronx Borough: (a) price per sq. yd.; (b) totals: Barber Asphalt Paving Co., 30 Church st., city, (a) \$1.07, (b) \$19,402; Sicilian Asphalt Paving Co., 41 Park Row, city, (a) \$1.03, (b) \$18,334; Uvalde Asphalt Co., 1 Broadway, city, (a) \$1.20, (b) \$21,360. Furnishing and setting new curb in parks on Broadway, between 110th st. and 122d st., in Manhattan Borough, (a) 4,925 lin. ft. new straight curb, (b) 400 lin. ft. new curved curb, (c) totals: Cooper & Evans Co., 220 Broadway, city, (a) \$1.48½, (b) \$2,33, (c) \$8,246; Michael Di Menna Construction Co., 2412 Hughes ave., Bronx, (a) and (b) \$1.18, (c) \$6,283; Julius Dragonetti, 1316 Washington ave., city, (a) \$1.38, (b) \$1.85, (c) \$7,536; P. J. Kane Contracting Co., 735 E. 150th st., city, (a) \$1.35, (b) \$1.65, (c) \$7,309.

Utica, N. Y.—King st. paving: Frank M. Johnson, Utica, Mack brick on crushed stone, concrete foundation, \$2,562.10; gravel, concrete, \$2,405.50; Warren Brothers (lithulithic) five inch concrete, \$2,470.90; four inch concrete, \$2,350.90.

Akron, O.—Paving: (a) Kenmore st., and (b) E. Market st.; prices given are for respectively stone, vit. brick or concrete curbing: Wildes & Davidson, (a) \$35,588, \$37,404 and \$34,121.46, (b) \$15,513, \$16,320 and \$14,936; E. McShaffrey & Son, (a) \$37,655, \$39,339 and \$36,330, (b) \$16,247, \$17,054 and \$15,782; Freshwater & Son, (b) \$19,312 and \$19,542, (a) \$43,283 and \$44,595; Enterprise Concrete and Construction Co., (a) \$44,808, vit. brick, \$45,200; Paul & Henry, (a) \$43,917, \$46,870 and \$46,323.

Harrisburg, Pa.—Construction of road in Moon Township, Allegheny County, Pittsburg: Donald McNeil, 908 Adelaide st., Pittsburg, \$14,137, local stone bottom, New-castle stone top; \$16,134, local stone bottom, Amiesite top. Hassam Paving Co., 37 Wall

st., New York, \$15,649, slag or stone bottom, Hassam cement top. McLaughlin Contracting Co., Pittsburg, \$13,767, native stone bottom, limestone top; \$17,742, native stone bottom, bituminous-macadam top. Ridge Bros. Co., Pittsburg, \$13,274, native stone bottom, Beaver or Lawrence County limestone top; \$17,249, native stone bottom, bituminous-macadam top. Reconstruction of roads in Union Township, Washington County, Washington: Standard Bitulithic Co., 50 Church st., New York, \$6,070, native stone bottom, native limestone top; \$8,045, native stone bottom, Warrenite top. Rietsch Bros., Washington, Pa., \$6,027, native stone bottom, limestone top; \$7,438, native stone bottom, bituminous-macadam top, mechanically mixed. W. E. Howley, Frick Building, Pittsburg, \$4,662, native stone bottom, limestone top; \$5,880, native stone bottom, bituminous-macadam top, mechanically mixed; \$5,637, native stone bottom, bituminous-macadam top, hand mixed; \$6,124, native stone bottom, bituminous-macadam top, penetration method. Hallam Construction Co., Washington, Pa., \$5,900, native stone bottom, limestone top; \$7,827, native stone bottom, Warrenite top; \$7,632, native stone bottom, Amiesite top. Donald McNeil, 908 Adelaide st., Pittsburg, \$5,616, native stone bottom, limestone top; \$6,726, native stone bottom, Amiesite top. Construction of road in Carroll Township, Washington County, Washington: Standard Bitulithic Co., 50 Church st., New York, \$82,683, native stone bottom, local limestone top; \$102,832, native stone bottom, Warrenite top. Rietsch Bros., Washington, \$86,393, native stone bottom, native lime or sandstone top; \$101,830, native stone bottom, bituminous-macadam top. Hallam Construction Co., Washington, \$73,903, native stone bottom, local limestone top; \$95,050, native stone bottom, Warrenite top; \$92,916, native stone bottom, Amiesite top. J. Ancarani, Portvue, \$66,426, native stone bottom, blue limestone top; \$82,723, native stone bottom, bituminous-macadam top, penetration method; \$78,723, native stone bottom, bituminous-macadam top, mechanically and hand mixed. W. E. Howley, Frick Building, Pittsburg, \$64,821, native stone bottom, limestone top; \$83,044, native stone bottom, bituminous-macadam top, mechanically mixed; \$80,337, native stone bottom, bituminous-macadam top, hand mixed and penetration method. Donald McNeil, 908 Adelaide st., Pittsburg, \$69,231, native stone bottom, limestone top; \$81,231, native stone bottom, Amiesite top.

Reading, Pa.—Bids for constructing 7,310 ft. of State road in Washington Township, Berks County, varied from \$16,217.27 to \$17,985.96; William McClellan, Strafford, lowest.

Reading, Pa.—Paving Plum st., Fehr & O'Rourke, Mack block, \$2.11 per sq. yd.; Auburn, \$1.95; John E. Weidner, Macavoy, \$1.95; Patterson, \$2; Mack, \$2; Bessemer, \$2.10; Board is testing Macavoy block before award is made.

Everett, Wash.—Board of Public Works has rejected all bids for grading alley between Hoyt and Hewitt and Wall sts. and for improving Walnut st., as excessive; on the Colby-Hoyt alley the bids were as follows: Thorsvig & Mile, \$3,970; Ellenson & Thorsvig, \$4,275; Everett Constructing Co., \$5,182; on Walnut st., Thorsvig & Mile, \$2,187; F. K. Follitt, \$2,447; Ellenson & Thorsvig, \$2,494; Everett Constructing Co., \$2,782; I. S. Pettit, \$3,443; new bids will be asked.

SEWERAGE

Birmingham, Ala.—County Sanitary Engineer L. M. Salter will prepare plans for proposed septic tank on Village Creek; bids will soon be asked.

Monrovia, Cal.—Olmstead & Gillian, Los Angeles, have prepared plans for construction of sewer system; cost \$120,000.

San Francisco, Cal.—Board of Supervisors has passed ordinances ordering construction of sewers in Ingleside District at cost of \$16,000.

Eastman, Ga.—Citizens have voted \$50,000 bonds for construction of sewerage system and for school improvements.

Sparta, Ga.—Citizens have voted \$40,000 bonds for sewers and water works.—J. D. Walker, Mayor.

East Moline, Ill.—H. G. Paddock, Moline, is preparing plans for sewer system for the business district; about six miles in length.

West Dundee, Ill.—Plans have been prepared by Edgar K. Wilson, Elgin, for a sanitary sewer system; plans include 900 ft. 15-in. tile, 2,200 ft. 12-in., 1,500 ft. 10-in. and 11,800 ft. 8-in., with 21 manholes, 1 flush tank and 21 lamp holes; excavation up to 16 ft. in depth.

Duluth, Minn.—Appeals for construction on proposed Woodland sanitary trunk sewer have been made to Board of Public Works.

Warrenton, Mo.—City proposes to expend \$14,000 for water works and sewers.—Fulmer-Coult Co., Chemical Bldg., St. Louis. Engineers: G. W. Hackman, City Clerk.

Blair, Neb.—Council is considering petition to have plans drawn for sewer system.

Albion, N. Y.—Civil Engineer Charles A. Ingersoll has been awarded contract by Sewer Commission to make survey for sewer system.

Utica, N. Y.—Bids have been rejected for construction of sewer in Varick st.

Bowbells, N. D.—R. B. Easton will prepare plans for proposed sewer system.

Dickinson, N. D.—City will vote Aug. 30 on \$70,000 bonds for constructing complete sewer system.

Akron, O.—Council has passed ordinance favoring \$10,000 bond issue for sewage and garbage disposal plant.

Barberton, O.—Estimates will be prepared by City Engineer for storm sewers on three streets.

Kennedy Heights, O.—Village Engineer has been authorized by Council to submit plans and specifications for sewerage system; system will consist not only of the sewers to be laid in streets, but will embrace sewage disposal plant also; system, together with the disposal plant, will cost \$150,000 to \$180,000; village has no sewers at present.

Massillon, O.—Upon the advice of City Solicitor Davis the Board of Control has rejected all sewer bids which were opened Aug. 15; contracts for building sewers in South Lincoln ave. and East Walnut, Thorn, Front and Water sts. will be re-advertised at once. Address Director of Service Pletzcker.

Hazleton, Pa.—Specifications for Diamond ave. sewer have been adopted.

Philadelphia, Pa.—Council will be asked to appropriate \$250,000 to extend new Cobb's Creek sewer north to 63d and Market sts. Address Chief Webster, of Survey Bureau.

South Bethlehem, Pa.—The Chairman of the Street Committee has been empowered to purchase c.-i. pipe necessary for drains at street crossings.

Upland, Pa.—Borough Council at meeting early next month will take up matter of constructing underground drainage system; settling basin and filtration plant will be necessary.

Williamsport, Pa.—Mayor Wolfe has vetoed Penn st. sewer ordinance.

Edgemont, S. D.—Council instructed City Auditor to advertise for bids to construct sewer in Sewer District No. 1.

El Paso, Tex.—Council has accepted and approved the plans for sewage and garbage disposal plant to cost \$100,000, work to be begun in 40 days.

Terrell, Tex.—Board of Managers of the North Texas Hospital for Insane are considering establishment of sewerage system at asylum; engineer will be selected to prepare plans and specifications.

Elma, Wash.—Installation of sewer system is being considered.

Keyser, W. Va.—The \$30,000 water works improvement bonds were sold to the Citizens' Trust and Guaranty Co., of Parkersburg, at \$103.61.

Costburg, Wis.—Village Board has ordered construction of sewer on Western ave.

Hamilton, Ont., Can.—Board of Works has recommended that sewer be constructed for use of Oliver Chilled Works, at a cost of \$9,000.

Winnipeg, Man., Can.—City has decided to construct four trunk sewers; districts to be benefited and cost as follows: District north of Polson ave.—Jefferson ave., McPhillips, Red river, \$275,690; McPhillips st., Jefferson, Selkirk ave., \$118,500; total, \$394,190. Clifton district—Clifton, Portage, Sargent, \$101,222; Lavinia, Clifton, Strathcona, \$6,757; total, \$114,736. District west of Clifton—Center from Assiniboine river to Portage ave., \$19,382. Ash st. District—Ash st., Assiniboine river to Godfrey, \$44,495; Godfrey, Cambridge st. to Renfrew, \$56,905; total, \$101,400. Total for four districts, \$629,708.

CONTRACTS AWARDED

Colton, Cal.—Constructing sewer system, to Watson & Spicer Co., Colorado Springs, Col., \$52,306.

Oroville, Cal.—To Cotton Bros. for constructing Oroville's sewer system, \$99,000; to this must be added \$6,000 for engineering purposes.

San Francisco, Cal.—Constructing sewer in Section C of Division st. sewer, to Healy Tibbitts Construction Co., Main and Market sts., city, \$62,244.

Chicago, Ill.—Laying sewers, to Carmine Roberts, Michael Pontorelli, Simon Ryan, William F. Healy and John W. Brunt.

Evanston, Ill.—To the M. Foley Co., for constructing a system of tile pipe sewers in eight streets, \$12,245.

Indianola, Ia.—Construction of sewers to Lidel Construction Co., Sioux City, lowest bidder: 5.133 lin. ft. 10-in. vit. pipe, \$1.25 per lin. ft.; 13,389 ft. 8-in. \$1.00; 1,258 ft. 6-in., 70c.; 33 common manholes, \$30 each; 11 drop manholes, \$35 each and 7 flush

tanks, \$100 each; other bidders: Smith & Sons, \$23,959.40; Lanna Construction Co., \$27,449.25; O. F. Doyer, St. Cloud, Minn., \$26,753.36; Des Moines Bridge & Iron Co., Des Moines, \$25,140.63; M. A. Camary, Harlan, \$25,679.70; Tibbey Bros., Davenport, \$27,479.66.—A. H. Gilliland, Consulting and City Engineer.

Shenandoah, Ia.—To Hamilton & Schwartz, for the construction of about 2½ miles of sanitary sewers; 77c. for 12-in. pipe, 72c. for 10-in. pipe, and 65c. for 8-in. pipe, and manholes \$40 each.

Stuart, Ia.—Tank and tower, Des Moines Bridge and Iron Co., Des Moines, lowest bidder, \$5,248.

Malden, Mass.—Oliver, Lawrence and Springdale section of Linden sewer, to John E. Palmer, \$7,653.75; contract for the Linden Brook, Beach and Salem st. section, to same contractor, \$4,975.75.

Billings, Mont.—Sewers, District No. 64, to E. Lindstrum, sewer pipe \$1.10 per ft.; manholes, \$70 each; flush tanks, \$175; District No. 63, to E. Lindstrum, sewer pipe \$1.30 per ft.; manholes, \$75, and flush tanks, \$175.

Newark, N. J.—Constructing Weequahic outlet sewer, to Jersey Paving Corporation, \$5,916.75.

Utica, N. Y.—Construction of vit. pipe sewer in Holland and Margaretta sts., to Perretta & Robertaccio, \$2,302; construction of vitrified pipe sewer in Ottilia st. to Jeremiah Augar, \$339.59.

New Wilmington, Pa.—Erection of the disposal plant for the municipal sewer system, to George Axe, city, \$4,800; other bidders ranged as high as \$5,600.

Scranton, Pa.—To Fabrizio D'Andrea, for building Tenth Ward sewer, \$3.50 per lin. ft.; cost about \$35,000.

Canton, S. D.—Constructing sewers, to Myrmo Bros., Sioux Falls, 50c. per lin. ft., and \$33 for each manhole.

Dallas, Tex.—Five carloads of sewer pipe, to the San Antonio Sewer Pipe Co.

Superior, Wis.—Constructing sewer on 20th st., to Andrew Johnson, \$4,499; other bidders: Sack Bros., \$4,629; Peterson & Holm, \$4,875; Ed Johnson, \$5,421; Sanitary Plumbing Co., \$6,249.

Buckingham, Ont., Can.—Wilson & Carriere, for construction of sewerage system, cost \$9,000.

Hamilton, Ont., Can.—Building sewer on Wentworth st., to S. Cheesman, \$1.15 per ft.

BIDS RECEIVED

Dayton, O.—Laying 11½ miles 4-in. to 15-in. vit. sewer pipe, mean of all bids, \$1.39 per cu. ft.; 20 sq. ft. brick and 20 sq. yds. asphalt paving to be excavated and re-laid, 8c. to 39c.; 130 manholes, mean average, \$22; paving, brick \$1.50, asphalt \$1.56 per sq. yd.; bids as follows: Larkin Bros., \$38,565; M. O'Herron & Co., \$40,596; T. J. Backus Construction Co., \$41,010.30; Gehbart & Kline, \$54,725.60.—E. Staackelm, Clerk.

Dayton, O.—Sewer and street work, lowest bidders, Glendale ave., from Lexington to Oxford, by grading and graveling, Hecker & Kirchner, \$939.85; Germantown storm sewer, Shafer & Dill, \$812.50; 6th st. storm sewer, from Tecumseh to Miami and Erie Canal, Shafer & Dill, \$467.20; storm water sewer on Glendale ave., from Lexington to Oxford, Bair & Rhodes, \$916.50; Clover and Harker sts., storm water sewer, Shafer & Dill, \$1,923.70; unfinished portions of streets were bid lowest upon by Clifton Hoolihan and Ed. Kiser.

Dallas, Tex.—Furnishing sewer pipe to city: San Antonio Sewer Pipe Co., by L. E. Baldwin and the Post Pipe Co., Texarkana the same figures, 4-in. 72c. per ft. 6-in. 11¼c., 15-in. 60c. to 67¼c., 18-in. 40c. to 45c., 20-in. 74¼c. to 83¼c., 24-in. \$1.06¼ to \$1.18¼, 6x6 Y's 45c., 6x6 T's 45c., 15x18 Y's \$2.70 to \$3.04¼, 15x24 Y's \$4.78¼ to \$5.34¼, 6-in. stops 3c. each. Athens Fire Brick Co.: 6-in. 46c., 4-in. 8¼c., 15-in. 46c., 18-in. 59c., 20-in. 79¼c., 24-in. \$1.12¼. 6x6 Y's 51c., 6x6 T's 51c., plugs 5c., 18x15 Y's \$2.36, 24x15 Y's \$4.50.

WATER SUPPLY

Hartselle, Ala.—Citizens have voted bonds to erect water works.

Nashville, Ark.—J. C. Stephenson Lumber Co. has been granted franchise to supply town with water.

Monrovia, Cal.—Citizens will vote about Oct. 1 on \$50,000 bonds for improvement of water system.

Oceanside, Cal.—City Engineer has made estimates as follows, of cost of the new city water system: 8,350 ft. of 10-in. c.-i. pipe, \$3,700 ft. 4-in., 1,800 ft. 6-in., 800 ft. 4-in., \$17,000.

Riverside, Cal.—City will soon purchase 71 new fire hydrants to be installed throughout city.

Fowler, Col.—Citizens have voted \$450,000 bonds for completion of reservoir.

Johnstown, Col.—Board of Trustees has decided to install \$12,000 water system.

Longmont, Col.—City has made \$35,000 appropriation for completing water system.

Yuma, Col.—Election will be held on bonds for improvement of water works.

Elkton, Del.—Town Council of Northeast has granted a franchise to George A. M. Johnson for a period of 20 years for construction of water works.

Port Tampa, Fla.—Citizens have voted \$25,000 of water works bonds.

Bloomington, Ill.—Consulting Engineer J. C. Morgan, Chicago, has prepared preliminary plans for proposed water system.

Carlyle, Ill.—Citizens have voted \$13,000 bonds for water works and electric light extensions.

Decatur, Ill.—Council has decided that city should build new dam at the water works.—Fred Literer, Chief Engineer.

Princeton, Ill.—Council is considering erection of larger reservoir.

Westfield, Ill.—Installation of water works, cost \$10,000, is being considered.

Roanoke, Ind.—Prospective water works will cost \$14,950; cost of maintenance the first year will be practically \$5,000.

Vincennes, Ind.—Action taken by State Board of Health authorizing the placing of sewer which will drain the city into Wabash River a mile above the city, will cause city to order new filter plant at once to be installed above sewer.

Council Bluffs, Ia.—Construction of complete new water system by city is solution of water question advocated by Alderman-at-Large Oscar Younkerman.

Kinsley, Kan.—Council has called election on \$12,500 bonds to extend present water system.

Harlan, Ky.—City will consider offers for water works franchise; pure water can be piped from Pine Mountain, 2½ miles distant, and from sufficient elevation for gravity system.—Will Ward Duffield, Secretary Commercial Club.

Henderson, Ky.—Mayor W. I. Thompson and other officials visited Paducah and inspected filter plant, with a view to installing one in this city at an early date.

Slidell, La.—Council is considering \$20,000 bond issue for water works system and school.

Newport, Me.—W. T. Haines is planning extensive improvements to water plant.

Lowell, Mass.—Mayor Meehan has signed resolution of Board of Aldermen requesting Water Board to ask for competitive bids for new pump prior to making appropriation for same.

Detroit, Mich.—The Water Board Committee on Extension and Construction has recommended that bond issue of about \$1,500,000 be asked to build 300,000,000-gal. reservoir north of city.

Sandusky, Mich.—Bids will soon be asked for water works, sewers and electric light plant; engineer not yet selected.—F. J. Benedict, City Clerk.

Fergus Falls, Minn.—L. P. Wolff, St. Paul, Minn., will report on plan for rebuilding dam.

Hampton, Minn.—City is considering installation of municipal water system.

Madison Lake, Minn.—Establishment of water system is being considered.

Magnet, Neb.—Citizens will vote on establishment of water system.

Buffalo, N. Y.—Council has passed \$1,000,000 bond issue for extension of water system.

Ogdensburg, N. Y.—Board of Aldermen has passed resolution providing for issue of \$175,000 bonds for installation of filtration plant.

White Plains, N. Y.—Water Commissioners have petitioned City Trustees for \$15,000 appropriation to install filtration plant.

Bellefontaine, O.—Contract will be let about Oct. 25 for installation of proposed sewer system.—H. E. Riggs, Toledo, Sanitary Engineer.

Carthage, O.—F. H. Eno, Columbus, is preparing plans for water works and sewer system.

Cleveland, O.—City is planning to construct submerged intake for the new 9-ft. tunnel; tunnel will extend out 16,000 ft. from the end of the present west side tunnel.

East Liverpool, O.—J. Richard Kommer has the contract for furnishing plans for water works, which are expected to cost \$125,000.

Greenville, O.—Council has authorized and recommended that Director of Public Service put down test wells for the purpose of securing sufficient water for water works plant.

Mt. Blanchard, O.—Construction of water works system is being considered.

Piqua, O.—Council has passed resolution providing for construction of a storm sewer in north end of the city, consisting of 2,660 lin. ft. of 48, 36 and 30-in. monolithic or reinforced pipe; 1,100 lin. ft. of 24-in. pipe, 9 manholes and 20 catch basins.—A. Schroeder, City Engineer.

West Carrollton, O.—Citizens have voted \$20,000 bonds for water and light.

Fairview, Okla.—City will expend \$50,000 for extension of water works and electric light system; improvements will include extension of water mains and transmission lines, erection of water tower, installation of power equipment, etc.—J. N. Voorhees, City Clerk.

Krebs, Okla.—Citizens have voted \$10,000 additional bonds for water main extensions.

Woonsocket, R. I.—Governor Pothier has signed act authorizing city to lay water pipes in Blackstone and other towns near city.

Tioga, Tex.—Citizens have voted \$10,000 bond issue for water works.—J. L. Webb, Mayor.

Payson, Utah.—Taxpayers have decided to ask Council to call election on \$50,000 bonds for the construction of a water works system; water, according to plans outlined by R. R. Lyman, Consulting Engineer, of Salt Lake, will be piped from Honeycomb Spring in Payson Canyon.

Bellingham, Wash.—Cost of supplying Silver Beach with water has been estimated at \$7,962.

Clarkston, Wash.—City has decided to install 15 fire hydrants.

Elma, Wash.—Installation of water system is being considered.

Loon Lake, Wash.—Gherke & Sons will install water and light plant.

Walworth, Wis.—Plans and specifications for a complete water system are required.—A. H. Hitchcock, Village Clerk.

Medicine Hat, Alta., Can.—City is considering replacing of all wood pipes by iron pipes in water works and sewage.

Ottawa, Ont., Can.—Cost of scheme to get city water supply from McGregor's Lake, in the Gatineau District, 12 miles north of the city, has been estimated at approximately \$2,000,000.

St. Catharines, Ont., Can.—Engineer Kennedy has submitted a report for improvement and extension of the water works at cost of \$52,000.

New Glasgow, N. S., Can.—Town has completed plans for a gravity system; cost \$200,000.

Prince Albert, Sask., Can.—By-law will be voted on to expend \$12,000 for filtration plant.

CONTRACTS AWARDED

Centralia, Ill.—Construction of dam, spillway, pipe line and gate house for new water supply system, to John D. Vogt, Belleville, for construction of dam, his bid approximating \$21,725; lowest bid on spillway, which is mostly concrete work, was by McCann Bros., Herren, but firm bid on entire job and protested against being awarded spillway, which is small item; H. H. Hall Construction Co., East St. Louis, for pipe line and gate house; being next lowest bidder on spillway, agreement was made between them and the McCanns, wherein Hall takes over the spillway; combined bid of Hall & Co., \$75,989.50.

Chicago, Ill.—Three 350-h.p. water tube boilers at 68th st. pump station, to Edge Moor Iron Co., Edge Moor, Del., \$12,200.

Joliet, Ill.—Building water main in Ottawa st., to William Moran & Co., for water main extension; engineer's estimate of job, \$4,183.03; bid, \$3,672.50.

Greenfield, Mass.—Construction of new Rocky Mountain reservoir, for completion by Dec. 20, 1910. P. A. Breglio, \$39,949; John E. Palmer, \$40,874; Field, Barker & Underwood, \$46,393; R. H. Newell & Co., \$40,325; Crosby & Parker, \$44,990; for completion by June 1, 1911. P. A. Breglio, \$37,257; John E. Palmer, \$36,924; Field, Barker & Underwood, \$41,118; R. H. Newell & Co., \$36,425; Daniel O'Connell's Sons, \$33,317; Crosby & Parker, \$38,900; estimated cost of the reservoir, including engineering, \$29,480.

Malden, Mass.—Lead pipe and pig lead, to National Lead Co., lowest bidder on pig lead, for two tons and for 20 coils of lead pipe, bid being the same as others.

Grand Rapids, Mich.—Construction of the sewer from Municipal Hospital grounds to Michigan ave., Martin Den Boer, \$2,347.12; Peter DeWitt, \$3,033.02; John J. Rens, \$2,998.70; Vander Weele Bros., \$2,669.06.

Slater, Mo.—Water works improvements to include reservoir chimney, etc., from plans of Burns & McDonnell, of Kansas City, Mo., to Jos. Bortenlanger.

Niagara Falls, N. Y.—To W. A. Shepard & Co., for laying water mains in 22d st. and Michigan ave., at \$501.10.

Barnesville, O.—Laying water pipe, to W. H. Patterson & Son, 1,400 ft. 8-in. 24c., 4,950 ft. 6-in. 21c., 150 ft. 4-in. 19c.; furnishing pipe to U. S. Foundry Co., 9 fire hydrants, 4-in. connections, to R. D. Wood, \$23.80; gate valves, to Rensselaer Mfg. Co., 3 6-in., \$11.20 each, and 5 4-in., \$6.20 each.

Steubenville, O.—Constructing concrete reservoir at County Infirmary, to J. B. Balm, Richmond, \$1,061.

Dallas, Tex.—Artesian well, to R. H. Dearing & Son at cost of \$8.45 per ft. If the city furnishes the steam, or at \$9.65 if

contractor generates steam from his independent plant.

New Westminster, B. C., Can.—To Municipal Construction Co., Vancouver, for laying new steel main to Coquitlam Lake, which will supply water to this city and the municipality of Richmond.

BIDS RECEIVED

Minneapolis, Minn.—One 20,000,000-gal. centrifugal pumping engine: Allis-Chalmers Co., Milwaukee, Wis., \$17,350; Platt Iron Works Co., Dayton, O., \$18,000; Henry R. Worthington Co., \$13,837 and \$15,177; Cadwell & Brown Co., Minneapolis, \$20,105 and \$22,527; Alberger Pump Co., \$12,883; Power Improvement Co., city, \$13,520 to \$15,930; for one 20,000,000-gal. vertical triple expansion pumping engine, Allis-Chalmers Co., Milwaukee, \$88,700; Holly Mfg. Co., \$106,700 to \$114,000; Horner, Owens, Rutschler Co., \$117,000; Camden Iron Works, Philadelphia, Pa., \$122,050.

LIGHTING AND POWER

Hartselle, Ala.—Citizens have voted bonds to erect lighting plant.

Montgomery, Ala.—About \$700,000 will be the cost of improvements planned by Citizens' Light, Heat and Power Co.

Tusculum, Ala.—Dr. J. O. Clark has petitioned Council for franchise granting certain rights and privileges concerning water power and improvements at springs.

San Andreas, Cal.—General Electric Power Co. preparing for the development of power sites and water rights owned by the company.—De Grand Brown, New York, Consulting Engineer.

South Norwalk, Conn.—Housatonic Power Co. will make improvements to its plant this fall, including replacing the present single-phase alternators with two-phase machines and the erection of a 12-mile transmission line to Georgetown, Conn., passing through South Wilton, Wilton and Cannon Station.—K. Punderford, New Haven, Manager.

Carlyle, Ill.—Citizens have voted \$13,000 bonds for electric light and water works extensions.

Chicago, Ill.—South Park Commissioners are preparing for installation of about 75,000 ft. of No. 6, single-conductor lead and paper covered cable, 5,000 ft. of four-conductor No. 6 lead and paper covered cable and 10,000 ft. of six-conductor lead.

Vandalia, Ill.—Citizens have voted \$10,000 bonds for repairs to municipal electric light plant and extensions to the water works system.

Marion, Ind.—Marion Light and Heating Co. has been granted franchise by the County Commissioners to run high-tension wire from its central power plant in city to Jonesboro.

Redkey, Ind.—Muncie Electric Co., Muncie, which recently purchased electric lighting and power plants at Dunkirk and Hartford City, will extend its service to this place.

South Bend, Ind.—Indiana and Michigan Electric Co. will place its wires underground in Washington, Colfax and La Salle aves.; cost, \$75,000.

Warren, Ind.—City is considering installation of additional dynamo in the municipal electric light and water plant.—W. H. Hickerson, Superintendent.

Belleville, Kan.—Light and water plant was destroyed; loss, \$40,000; it will require 60 days to build and equip another plant.

McPherson, Kan.—Water and Light Commission has decided to erect \$5,000 light and water plant.

Salina, Kan.—Salina Light, Power and Gas Co. has been chartered to supply city with gas, light and power.—G. H. Smedley, C. E. Ruhe, C. W. McBride, A. W. Gay and R. N. Camp, Incorporators.

Northville, Mich.—Village will purchase about Sept. 1 lead-covered cable and conduit for 2,500-volt service; day service for lamps and motors has been established.—Samuel Wilkinson, Superintendent.

Oxford, Mich.—City will soon let contract for a 20,000-gal. per hour turbine pump, connected to a single-phase motor.—H. E. Allen, Superintendent Electric Light Plant and Water Works.

Alexandria, Minn.—Council has decided to install new unit in electric light plant at cost of \$4,000.

Brainerd, Minn.—M. D. Stoner is considering construction of power plant; cost, \$300,000.

Preston, Minn.—City proposes to construct water power plant at cost of \$15,000.—Geo. A. Love, Mayor.

Jackson, Miss.—W. W. Womack is considering developing water power to generate electricity for lighting, etc.; has not purchased machinery.

Higginsville, Mo.—City is considering enlarging electric light plant.

Shelbina, Mo.—City is considering installing boiler in electric light plant.—E. P. Weaver, Superintendent.

Bowman, N. D.—C. M. Cleveland, Wausau, Wis., is interested in construction of electric light plant.

Wahpeton, N. D.—City is considering seriously advisability of changing system of street lighting now in use for something more modern.

Columbus, O.—City officials are considering plans to increase capacity of city light plant to supply commercial lighting.

Jackson, O.—Extensions will be made to the municipal electric light plant; bids will be asked.—W. A. Dallas, Clerk Board of Public Works.

Fairview, Okla.—City will extend electric light system, install power equipment, etc.—J. N. Voorhees, City Clerk.

Albany, Ore.—Great Western Power Co. has applied to city for franchise for distribution of electricity in large quantities.

Erie, Pa.—T. Sherman Clark, Edward G. Germer, Hugh Neely Fleming, Frank M. Wallace and Harry L. Moore have applied for charter for Erie Light and Power Co., proposing to generate gas and electricity for lamps, heat and power purposes.

McKeesport, Pa.—T. S. Arnold, 1019 Jenny Lind st., is interested in proposed construction of gas producer plant.

Pine Grove, Pa.—Town will erect a new electric light plant and introduce electric lights.

Wilkes-Barre, Pa.—Improvements are to be made to the local light and steam service by new company recently formed through the combination of companies controlling this end of public service; plans call for the erection of a plant on site of the former steam plant and the installation of new machinery and a pipe line, all of which are to require the expenditure of over \$500,000.

Blackstone, R. I.—Board of Selectmen have concluded to change street lighting from arc to incandescent lights.

Dillon, S. C.—Citizens will vote soon on \$15,000 bonds for electric light plant.—M. B. Hargrove, Mayor.

Bowdler, S. D.—Construction of municipal electric plant is being considered.

Brownsville, Tex.—Citizens have voted \$30,000 bonds issue for enlargement and extension of electric light plant and water works.

Coleman, Tex.—Bids will be received for \$20,000 electric light improvement bonds.—F. A. Dibrell, City Secretary.

Loon Lake, Wash.—Gherke & Sons will install light and water plant.

Wheeling, W. Va.—Ordinance granting the Wheeling Electrical Co. a 50-year franchise to manufacture and sell electricity for commercial purposes in the city has been passed by both branches of Council; President R. E. Breed, of Electrical Co., has stated that company would at once commence work on its \$700,000 plant on south side.

Bessemer, Wis.—City has granted to the officials of Ashland Power Co. electric light and power franchise.

Sun Prairie, Wis.—Citizens have voted bonds for purchase of electric light plant.

Brockville, Ont., Can.—Brockville Light and Power Department has rejected bids for construction of new power house adjoining pumping station for purpose of combining the two plants, as too high; will do work by day labor.

Stettler, Alta., Can.—Proposed electric light plant will not be constructed this year.—David Mitchell, City Secretary-Treasurer.

St. Catharines, Ont., Can.—Ratepayers have passed by-law granting Ontario Power Co., Niagara Falls, Ont., franchise to furnish electricity.

Yorkton, Sask., Can.—Ratepayers have passed the by-law appropriating \$35,000 for installation of an electric light plant.

CONTRACTS AWARDED

Rochester, N. Y.—To Rochester Railway and Light Co., to supply electric current for power at Brighton pumping station for \$53 h.p. per year; 50 h.p. will be needed.

Syracuse, N. Y.—To David J. Nicholson, for building subpower station for Syracuse Lighting Co. at Liberty st. and the Erie Canal towpath; cost \$3,800.

Panceville, Tenn.—To J. G. White & Co., Inc., 43 Exchange pl., New York, for complete engineering and construction of a hydroelectric power plant for Eastern Tennessee Power Co.; total cost \$2,000,000.

Victoria, Tex.—To Victoria Mfg. Co., to furnish 150 60-c.p. tungsten lights and seven 6-amp. arc lights.

Belleville, Ont., Can.—Electric plant for city pump house, to Canadian General Electric Co., \$2,660.

Toronto, Ont., Can.—To Teagle & Son, for masonry on electric substation at Edwain and Ruskin sts., for \$29,905; roofing, Duthie & Co., \$187; plumbing, Fred Armstrong Co., \$410; painting, Jas. Casey, \$170.

Victoria, B. C., Can.—To L. A. Borde, city, for installation of cluster lights, \$3,481.

BIDS RECEIVED

Decatur, Ill.—Construction of more of municipal light plant: General Electric Co., \$30,146; Westinghouse Electric and Manufacturing Co., \$28,775; Western Electric Co., \$3,147, and under other specifications, \$2,453; Walker Electric Co., \$2,350 and under second specifications, \$2,780; Westinghouse Co., switchboards, \$2,185, and a second bid, \$2,585; Ridgeway Dynamo and Engine Co., \$3,090.

FIRE EQUIPMENT

Naugatuck, Conn.—Chief Clark is urging purchase of combination hose, chemical and ladder automobile.

Norwich, Conn.—Purchase of auto apparatus is being considered.

Tampa, Fla.—City will probably erect \$10,000 fire headquarters on Adam Katz property at Zlach and Jefferson sts.—Henry Johnson, Chairman Fire Committee.

Carlville, Ill.—Purchase of additional hose is being considered.

Geneva, Ill.—Installation of auxiliary hose cart equipped with 700 ft. of hose is being considered.—Address Fire Marshal Nelson.

Salina, Kan.—Fire Chief Broderick is considering purchase of chemical auto.

Boston, Mass.—Orient Heights citizens are urging installation of auto chemical.

Boston, Mass.—Acting Commissioner Carroll has urged purchase of two first-class steam fire engines and three second-class fire engines, the total cost of which would be \$27,500; one quick-raising water tower, \$6,500; two auto chemicals, \$11,000; three aerial trucks, \$16,500; \$9,000 worth of hose; \$1,000 worth of harness.

Everett, Mass.—Council will take action Oct. 10 on installation of fire alarm service; cost \$7,000.

Lowell, Mass.—City is considering purchase of another auto, more fire alarm boxes and new station in Oakland district.

Butte, Mont.—Residents of Meadville and of McQueen addition are interested in matter of securing fire plugs and hose and the organization of volunteer fire departments.—Charles Wedlake, Chairman.

North Platte, Neb.—Bids will be received Sept. 6, 5 p.m., for furnishing one fire hose wagon, capacity 1,000 ft. 2½-in. hose, carrying two three-gallon portable chemical fire extinguishers, etc.

Manchester, N. H.—Goff's Falls District has requested 2,000 ft. of hose; cost, \$1,600.

Millburn, N. J.—Township Trustees have recommended \$6,000 bond issue for purchase of auto chemical wagon.

Niagara Falls, N. Y.—Tax election may be called to provide appropriation to purchase two fire engines and erect two engines.

Webster, N. Y.—Village will purchase 500 ft. of hose, 50-gallon chemical engine and four-bolt pipes.

Lumberton, N. C.—Volunteer fire department has been organized.—L. T. Williams, Chief.

Midvale, O.—Erection of fire station is being considered.

Chester, Pa.—Because of lack of bidders, Felton Fire Company has been unable to award contract for new building.

Darby, Pa.—Citizens will vote in November on proposed fire house and town hall improvement.

Meadville, Pa.—Dick Hose Co. is urging repair of present fire house.

Scranton, Pa.—Local contractors have been asked to submit new bids on erection of proposed fire houses in three wards.

Providence, R. I.—City will provide Chief, District Chiefs and Superintendents of fire alarm with auto wagons at cost of \$10,000.

Dallas, Tex.—East Dallas Heights Improvement League is urging better fire protection.—V. F. Pace, President.

Orange, Tex.—Firemen are urging purchase of combination chemical engine and ladder.

Midvale, Utah.—Chief Northey, of Fire Department, has been informed by Fire Committee that city will furnish the department with uniforms for parade purposes, rubber coats, helmets and boots for use during fires, and will also buy new hose cart to cost \$400, and later purchase hook and ladder truck and other equipment.

CONTRACTS AWARDED

East San José, Cal.—Furnishing \$800 ft. of "Amazon" fire hose and two hose carts, to Gorham Rubber Co., \$882.

Miami, Fla.—Auto apparatus, 40-gal. tank machine, to Webb Mfg. Co., \$5,750.

South Orange, N. J.—Construction of the firehouse in Maplewood ave., to George Brown, \$2,574.99.

San Antonio, Tex.—Construction of two new fire stations, to H. C. Jones, South Presa st. station, \$2,796, and to J. B. Sammons, Prospect Hill station, \$4,140.

BRIDGES

Birmingham, Ala.—Board of Aldermen has adopted a resolution authorizing the construction of viaduct at 1st ave.

Pasadena, Cal.—Council will soon order election on \$150,000 bonds to construct a bridge over Arroyo Seco River; city will also let contract for plans and estimates.—Wm. F. Knight, Chairman Bridge Committee.

Red Bluff, Cal.—Voters of Tehama County have defeated the county bond issue of \$150,000 for construction of the bridge over the Sacramento River at Tehama and for improvement of roads.

Pueblo, Col.—Nearly \$35,000 will be necessary to replace bridges and culverts washed away by recent floods.

Bloomington, Ill.—Construction of concrete arch bridge across Sugar Creek on Clinton st. is being considered; cost \$3,600.—Elmer Folsom, City Engineer.

Mendota, Ill.—Bids have been rejected for construction of three bridges and new bids will be asked; bidders, Herman Bierwirth, \$3,334; Charles Walter, \$4,006; H. Zolper & Sons, \$4,042.

Proviso, Ill.—Engineers Westcott & Ronneberg, 188 Madison st., Chicago, will at once take estimates for two reinforced concrete highway bridges, 70 ft. and 30 ft. spans.

Rockdale, Ill.—Village Trustees will erect a bridge across canal at Midland ave.

New Castle, Ind.—County Commissioners have rejected only bid, as too high, for erecting bridge across Flatrock; \$1,250 available.

South Bend, Ind.—County Commissioners have decided to construct three new concrete bridges in south part of city.

Newton, Kan.—Harvey and Sedgwick Counties will join in construction of concrete bridge.

Liberty Grove, Md.—Cecil County Commissioners have decided to replace old wooden covered bridge spanning Stone Run with iron structure.

Flint, Mich.—City Engineer will prepare plans for bridge across Flint River to Union Island.

Burlington, N. J.—Burlington County Freeholders have ordered construction of concrete bridge over Crosswicks Creek, connecting Burlington and Mercer counties.

Edenton, N. C.—Chowan County will construct bridge across Rockyhook Creek; length, 150 ft.—W. J. Berryman, Acting County Clerk.

Ottawa, O.—Bids will be received Sept. 6, 5 p. m., for \$23,000 5 per cent semi-annual bridge bonds.—Benj. F. Krouse, City Clerk.

Carlisle, Pa.—Cumberland County Commissioners propose to strengthen 65 wooden and iron bridges, probably by placing heavy iron girders under the center of each.

Topton, Pa.—Town has made application to the Berks Court to have a new bridge erected in borough.

Benton, Tenn.—Polk County Commissioners are considering \$16,000 appropriation toward construction of bridge over Ocoee River at Coxies Ford.

Cuero, Tex.—De Witt County will vote Nov. 8 on \$15,000 bonds for construction of bridges within county and across Fifteen-mile Collette Creek.

Dallas, Tex.—The Dallas County Commissioners' Court has passed an order to acquire and condemn the Bowser viaduct right-of-way, and will at once advertise for bids for the building of the viaduct.

San Antonio, Tex.—San Antonio Traction Co. will rebuild bridge over Apache Creek on South Flores st.

San Marcos, Tex.—Road Precinct No. 1 of Hays County will vote Oct. 13 on \$20,000 bridge and road bonds.

Portsmouth, Va.—Mayor Reed has signed an appropriation of \$3,500 to rebuild the Washington st. and Scottsville bridge, and to construct a culvert at the southern extension of Dinwiddie st.

Ligonier, Wash.—Council has adopted resolution providing for construction of temporary combination street car, wagon and foot bridge at Stone ave., across Lake Union; cost, \$30,000.

CONTRACTS AWARDED

Escalon, Cal.—To R. C. Stone, to construct steel and concrete bridge over Stanislaus River, \$29,540.

New Britain, Conn.—Repairing Monroe st. bridge, to C. B. Cadwell.

Rushville, Ind.—Constructing a 55-ft. concrete arch bridge in Washington Township to the Pan-American Bridge Co., New Castle.

Fort Dodge, Ia.—To Indiana Bridge Co., Muncie, Ind., for So. 3d st. viaduct, \$57,332; proposal calls for creosoted planks, creosoted wood block paving and cross-ties ready for street railway.

Salem, N. H.—Civil Engineer Wm. E. Lancaster has contract for constructing new concrete bridge at Thorndike Foster's corner.

Herkimer, N. Y.—Construction of a concrete and iron bridge over Bellinger Creek on Church st., to J. H. Brothers, city, \$11.03 per cu. yd.; plans and specifications prepared by City Engineer Wilber.

Okemah, Okla.—Twenty-four additional bridges, to Missouri Valley Bridge and Iron Co., \$35,000.

Butler, Pa.—Bridge over West st. to Penn Bridge Co., of Beaver Falls, for bridge proper, \$5,492; to I. T. Heaven, Mt. Chestnut, for substructure, of cement, \$6.17 per cu. yd.; to American Bridge Co., Kearns bridge, \$2,915; substructure to J. D. Fleming, Millerstown, \$5.94 per cu. yd.

Pottstown, Pa.—Erection of bridge, to Willauer & Co., Pottstown, for \$4,774, and to James Smith, Green Lane, for bridge in Marlborough, \$2,992.

Clarksburg, W. Va.—Erecting concrete and steel bridge over Elk Creek to Broad Oaks, to the Oswego Bridge Co., \$25,000.

Cheyenne, Wyo.—To Pueblo Bridge Co., Pueblo, Col., for constructing bridge at Lingle, \$19,000.

BIDS RECEIVED

Fort Dodge, Ia.—S. 3d st. viaduct: Four proposals—Proposal No. 1, 3-in. plank floor with crossies in place ready for street railway rails; proposal No. 2, creosoted plank floor with creosoted block paving and crossies in place for rails of street railway; proposal No. 3, 3-in. plank floor, no crossies; proposal No. 4, creosoted plank floor and creosoted block paving with no crossies: Indiana Bridge Co., \$55,322; \$57,332, awarded contract, \$54,448 and \$56,486; other bidders: Milwaukee Bridge Co., Milwaukee, Wis., \$63,969, \$64,948, \$62,598, \$63,577; Iowa Bridge Co., Des Moines, \$68,400, \$73,400, \$68,400, \$73,400; Midland Bridge Co., Kansas City, Mo., \$69,900, \$75,900, \$69,500, \$75,500; W. W. Roberts, Minneapolis, Minn., one bid submitted at \$74,400; Penn Bridge Co., Beaver Falls, Pa., \$65,133, \$66,779, \$63,900, \$65,541; Lana Construction Co., Harlan, Ia., \$64,000, \$66,000, \$69,000, \$60,500; A. Y. Bayne & Co., Minneapolis, Minn., \$59,800, \$67,045, \$58,995, \$65,492; Central States Bridge Co., Indianapolis, Ind., \$63,500, \$62,000, \$60,000, \$61,000; Des Moines Bridge and Iron Works, Des Moines, Ia., \$58,900, \$64,900, \$58,300, \$64,600; Toledo Massillon Bridge Co., Toledo, O., \$70,500, \$76,000, \$70,000, \$75,000; estimated length of bridge, including that over valley, is 1,153 ft., while it will be 31 ft. in width.

Boston, Mass.—Reconstruction of Albany st. bridge over Boston & Albany freight tracks; New England Structural Steel Works, lowest bidder, \$9,479; only competitor, Boston Bridge Works, \$10,295.70.

MISCELLANEOUS

Chico, Cal.—City will readvertise for \$19,000 local improvement bonds.

Oakland, Cal.—Council has ordered Board of Public Works to ask for bids and to award contract for sprinkling oil on certain streets.

Santa Ana, Cal.—Citizens are considering election on \$155,000 bonds for following: Outfall sewer to Newport Bay, reservoir for conservation of water for domestic use of the city, park, and municipally owned convention hall.

San Francisco, Cal.—Twin Peaks Tunnel and Improvement Association has adopted resolution authorizing petitioning of Board of Supervisors of the City and County of San Francisco to provide for bond issue of about \$2,500,000 to carry out tunnel project.

Jacksonville, Fla.—Board of Public Works has decided to ask Council to insert item of \$10,000 in budget, now being prepared, as first payment on new crematory for city.

Winslow, Ill.—Rebuilding of town hall has been ordered.

Havre de Grace, Md.—Mayor Carter has appointed committee, consisting of entire Town Council, to devise ways and means to furnish public drinking fountain for man and beast.

Westfield, Mass.—Erection of better jail is being considered.

Grand Rapids, Mich.—City Engineer has been ordered to prepare plans for erection of comfort station in Campau Square.

Bemidji, Minn.—The First National, Northern National and Security State banks of Bemidji will jointly purchase \$12,000 permanent improvement city bonds; money will be used for new and modern jail, and the remodeling of the city hall and other improvements.

St. Paul, Minn.—City is considering municipal garbage incinerator; Board of Aldermen is considering resolution carrying \$300 to perfect plan.

Billings, Mont.—Bids will soon be asked for erection of detention hospital by city and county; revised plans accepted.

Millburn, N. J.—Township Trustees have recommended \$40,000 bond issue to erect municipal building.

Poughkeepsie, N. Y.—Council is considering purchase of combination auto patrol and ambulance.

Rochester, N. Y.—Finance and City Property Committees are considering erection of garbage incinerator.

Rochester, N. Y.—Park Board is considering plan of building pier out in the lake at Durand-Eastman Park; cost between \$3,000 and \$4,000.

Akron, O.—Two public lavatories are to be built in the city without further delay; Council passed ordinance for bond issue of \$5,900 for first of lavatories to be built at intersection of Main and Market sts.

Cincinnati, O.—Retaining wall of concrete will be built on hillside of Price hill; recommendation by City Engineer Shipley.

Konawa, Okla.—City is considering erection of \$7,000 city hall.

Reading, Pa.—Mayor Rick has signed ordinance authorizing public loan of \$1,275,000, providing citizens vote it; bill provides \$500,000 for a new city hall, \$325,000 for additional parks, \$225,000 for paving and \$225,000 for storm sewers.

York, Pa.—Farquhar Park will be enlarged, Council agreeing to purchase adjoining land.

Aiken, S. C.—Citizens have voted \$78,000 bonds.

Austin, Tex.—City is considering erection of market house and auditorium at 5th and Guadalupe sts.

San Antonio, Tex.—Jail to be equipped with all modern improvements—16 cells for lunatics, 8 cells padded, and separate apartments for juveniles, also an emergency operating room and hospital is under consideration for construction by Bexar County Commissioners.

Salt Lake City, Utah.—Plans by J. A. Headlund have been selected by County Commissioners for \$120,000 county infirmary and hospital.

Port Townsend, Wash.—City will erect public dock.—Walter Rutz, Mayor.

CONTRACTS AWARDED

Florence, Ala.—Building new county jail, to Hull Construction Co., Jackson, Miss., \$15,096 for the building and \$4,677 for steel work, heating and sanitary fixtures; material used will be from Pauley Jail Building Co., St. Louis.

Louisville, Ky.—Winter uniforms and caps for Louisville Police Department: To Levy Brothers, uniforms and overcoats, and to Sheeman & Bosse the caps; dress coats for the patrolmen, \$18.50, for officers, \$21.75; overcoats will cost \$22.50 with the exception of bicycle policemen, \$20; trousers, \$6.50; caps of officers of and above the rank of Captain, \$4.75; for Lieutenants, Sergeants and Corporals, \$3.75, and for patrolmen, \$2.75.

Kansas City, Mo.—Remodeling police holdover, to Alexander Kinghorn for general work, \$14,000; A. McKinley & Co. received for pumping \$4,989, and Otis Elevator Co. for elevator, \$1,513; Lewis & Kitchen will install the heating and ventilating system, \$3,485.

TOO LATE FOR CLASSIFICATION

STREET IMPROVEMENTS

Los Angeles, Cal.—Highway Commission is making plans for construction of boulevard from Ave. 64 to Eagle Rock.

Fort Scott, Kan.—Council has decided to grade and macadamize portion of Marian ave.

Mt. Vernon, Ky.—The Rockcastle Fiscal Court has decided to build three miles of turnpike in Rockcastle county, either in this fall or early in spring.

Havre de Grace, Md.—Farmers of Norrisville and vicinity are making effort to have the public road from Deer creek to Wiley's Station, distance of two and a half miles, macadamized; cost, \$20,000.

Duluth, Minn.—Need of street improvements west of Twelfth Ave., West, is being urged.

Syracuse, N. Y.—Next year 23.3 miles of state and county highways will be constructed in Onondaga County.—Fred W. Sarr, Division Engineer.

Reynoldsburg, O.—Council has approved County Surveyor Lindsay's plans for rebuilding county roads.

Dallas, Tex.—Resolutions have been adopted approving specifications and calling for bids for the paving of Griffin st., of Market st. and of Main st.

CONTRACTS AWARDED

Washington, D. C.—To E. G. Gummel, 300 Rhode Island ave., N. W., for grading, setting and resetting curb and cobble gutters, 39c., 27c. and 37c., respectively.

Evanston, Ill.—Paving Gaffield pl. with macadam to M. Foley Co. at \$3,310; also Dewey ave. at \$7,405; Pratt ct. and Simpson st. at \$7,823, and Stanley ave. and Livingston st. at \$5,794; also for sewers in eight streets in Germania Addition at \$12,245.

Pekin, Ill.—Street paving, 27,300 sq. yds. brick, concrete foundation, to Cement Construction Co., Springfield, \$1.68; resetting 6,000 ft. old curb, 10c., and setting 3,000

ft. new concrete curb, 25c.—R. P. Sander- sen, Engineer.

Newport, Ind.—Construction of J. T. Higgins gravel road in Eugene Township to Harry A. Carpenter, Clay County, \$9,321, and the Coon Hollow road, in Clinton Township, to George and Charles Sykes, \$5,300.

Vincennes, Ind.—Improvements of 12th and 13th sts., to Edward Pennington, city; both streets are to be graded and graveled only; 12th st. will have to be filled in and 13th st. will have to be excavated several feet; 12th st., embankment 25c. yd., gravel 70c. yd.; 13th st., excavation 10c. yd., gravel 70c. yd.

Wichita, Kan.—Laying 26,255 sq. yds. bitulithic on Cleveland ave., to Kansas Bitulithic Co.

Baltimore, Md.—Building Liberty road to P. Flanigan & Sons, about \$125,000; asphalt and vit. brick will be used.

Boston, Mass.—To Henry M. McBride, Brighton, for construction of 6,200 ft. of State highway in town of Milford, \$10,030.50; to same, 1,250 ft. of macadam road for Selectmen of town, \$2,005.50; to D. H. Damon, Ashby, 5,500 ft. of State road in Townsend and Ashby, \$8,230; to The Worcester Broken Stone Co., Worcester, to surface 8,200 ft. of State road in town of Palmer, \$4,922.50; to H. L. Thomas, Middleboro, to surface about 8,900 ft. of State highway in town of Whitman, \$3,889.50; contracts which were not awarded called for work in towns of Sturbridge and Sandwich.

Brooklyn, N. Y.—To Brooklyn Alcatraz Asphalt Co., 407 Hamilton ave., by the Arsenal Central Park Board, New York City, for paving, etc., traffic road, Ocean Parkway, \$61,259; also for grading, etc., Parkside ave., \$39,707.

Rome, N. Y.—Paving East Willett st. from James to Spring sts., \$3,188.40, and Elm st., from George to Madison, \$5,539.50, to Warren Brothers Co.

Cleveland, O.—Paving 26 streets with brick, in all about 83,000 sq. yds., to C. F.

Relley for Hohnden ave., W. 58th pl., E. 78th st., North End; E. 78th st., South End, and E. 37th st., total \$29,772; to Cleveland Trinidad Paving Co., for Archwood ave., W. 39th, 41st and 42d sts., Elton ave. and E. 50th st., north and south, total \$32,900; Roehl Bros. for W. 11th and 81st sts., Aspen, Theresa Gould and Tyler Courts and E. 23d pl., total \$35,581; John R. Bentley, for E. 99th st. and Burwick road, \$19,721; to M. E. Kavanaugh, for Fullerton ave. and Wheat Court, for \$10,199, and to the Enterprise Paving and Construction Co., for Roanoke and Virginia aves., \$7,943; to A. Emery & Son, to pave Coopermill road, distance about one mile, \$12,150.

Dayton, O.—To Frank Tejan, for macadamizing mile of new Troy pike, south of Chambersburg, \$5,291.

Galveston, Tex.—Grading of new work on the Boulevard, from Strand to Ave. H, to J. C. Kelso, 10c. per yd.; total yardage, \$2,700.

Toronto, Ont., Can.—Sidewalk construction on Markham st., by Barber & Young, 57 Adelaide st., East, York Township engineers, to E. J. Elliott, 279 Main st., city, 48c. per lin. ft.

SEWERAGE

St. Augustine, Fla.—Council has passed ordinance providing \$100,000 bond issue for sewers.

South Bend, Ind.—Board of Public Works has decided to construct sewers on East Calvert st.

Haverhill, Mass.—Council has ordered \$1500 sewer on Hilldale ave.

Schenectady, N. Y.—City Engineer Fitzgerald has prepared plans for sewerage boulevards at cost of \$30,000.

Fernie, B. C., Can.—By-law to expend \$32,000 on sewerage and fire alarm systems has been passed.

Prince Albert, Sask., Can.—Council has decided to submit to ratepayers \$110,000 by-law for construction of a sewage disposal system.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Ohio.....	Hamilton.....	Sept. 2, noon.....	Bldg. all cement sidewalks, curb and gutter during 1910.....	C. M. Robertson, Clk. D. Pub. Serv.
Illinois.....	East Peoria.....	Sept. 3, 2 p.m.....	Brick paving 19,000 sq. yds., on 6-in. gravel, 2-in. sand cushion and sand filler and 1-in. sand surface; 500 lin. ft. protection stone curb, 6-in. thick, 14-in. high; 3,000 cu. yds. excav.....	Chas. C. Arnold, Pres. Bd. Loc. Imp.
Minnesota.....	Mankato.....	Sept. 5, 10 a.m.....	Paving an alley with brick.....	A. H. Scherer, City Clerk.
Minnesota.....	Albert Lea.....	Sept. 5, 5 p.m.....	Bldg. 9,340 ft. concrete curb; 831 ft., 15 and 12-in. drain pipe.....	C. J. Dudley, City Clerk.
Pennsylvania.....	Ingram.....	Sept. 5, 7.30 p.m.....	Grading, curbing, paving Verner ave.....	J. S. Murry, Boro. Engineer.
Pennsylvania.....	Harrisburg.....	Sept. 6.....	Bldg. 8,888 ft. State road in Indiana Boro., Ind. Co.....	J. W. Hunter, State Hwy. Comr.
Iowa.....	Davenport.....	Sept. 6.....	Asphalt paving, 5,331 sq. yds.; 1,220 lin. ft. curb flanged with Portland cement flanges, 2,552 ft. old curb reset.....	A. M. Compton, Chm. Bd. Pub. Wks.
New Jersey.....	Haledon.....	Sept. 6.....	Laying 4-in. macadam on 3 sts.; repair macadam, 1 st.....	Wm. J. Turner, Boro. Clerk.
W. Virginia.....	Wheeling.....	Sept. 6, 2 p.m.....	Macadam paving; about 3,245 yds.; four districts.....	A. S. Bell, Co. Road Engr.
New York.....	New York.....	Sept. 8.....	Grading and paving sts., lay water and gas mains Mun. bldg.....	K. L. Martin, Comr. Bridges.
Pennsylvania.....	Nanticoke.....	Sept. 10, 7 p.m.....	Brick paving on concrete or ash base, curb, etc., 980 lin ft.....	Judson Abbott, Chm. St. Comr.
Kentucky.....	Cynthiana.....	Sept. 13.....	Grading, macadamizing, Bottle Grove ave., concrete walk, curb and gutter, Water st.....	J. A. Dougherty, City Clerk.
SEWERAGE				
Minnesota.....	Duluth.....	Sept. 2, 10 a.m.....	Bldg. 4 sections of sanitary sewer.....	O. G. Olson, Pres. Bd. Pub. Wks.
Ohio.....	Massillon.....	Sept. 3, noon.....	Bldg. 3 sanitary sewers, Third, Thorne and Water sts.....	Wm. A. Pietzcker, Dir. Pub. Serv.
Missouri.....	Jefferson.....	Sept. 5, 4 p.m.....	Furn. material and bldg. sewers in Dist. 12.....	E. F. C. Harding, City Engineer.
Washington.....	Ellensburg.....	Sept. 5.....	Bldg. sewers to cost \$25,000.....	City Clerk.
Pennsylvania.....	Kingston.....	Sept. 6.....	Bldg. sewers in 3 sts.; Young and Wentermuth, Wilkes-B., Eng.	W. J. Williams, Boro. Secretary.
Colorado.....	Trinidad.....	Sept. 12, 8 p.m.....	Bldg. two 6-in. and 8-in. sewers, 3 sts.....	I. Q. Millikin, City Clerk.
WATER SUPPLY				
Ohio.....	Hamilton.....	Sept. 2, noon.....	Furn. 10 tons extra heavy c.-i. fittings for 4, 6 and 8-in. wrought screw pipe for natural gas, also wrought iron pipe, etc.....	City Clerk.
South Dakota.....	Carthage.....	Sept. 5.....	Water improvements; cost \$3,000.....	Wm. Mack, City Auditor.
BRIDGES				
New Jersey.....	Newark.....	Sept. 6, 3 p.m.....	Bldg. 3 concrete culverts or extending arch bridge.....	Jas. Owen, Co. Engr.
Pennsylvania.....	Uniontown.....	Sept. 8.....	Bldg. bridge over Georges Creek.....	J. S. Langely, Chm. Co. Comrs.
Texas.....	Gonzales.....	Sept. 12.....	Bldg. bridge across Guadalupe river; cost \$6,000.....	W. B. Green, Co. Judge.
LIGHTING AND POWER				
Nebraska.....	Fremont.....	Sept. 5, 7.30 p.m.....	Furn. horizontal steam turbine and generator, 500 k.w. cap.; 3-phase, 60 cycle, 2,300 volts; also condenser with found., switchboard, piping etc., cost complete, \$15,000.....	P. A. Nelson, Chm. Bd. Pub. Wks.
MISCELLANEOUS				
Iowa.....	Silver City.....	Sept. 5, 4 p.m.....	Bldg. concrete city jail.....	J. B. Herde, City Recorder.
Montana.....	Glendive.....	Sept. 5, 10 a.m.....	Bldg. county hospital.....	R. L. Wyman, County Clerk.
Pennsylvania.....	Media.....	Sept. 7.....	Collecting garbage for one year.....	Ed. Minton, Town Clerk.
New York.....	Brooklyn.....	Sept. 8.....	Reconstructing and repairing ferry structures foot of Broadway	B. F. Cresson, Dep. Act. Comr. Docks
New York.....	New York.....	Sept. 8.....	Bldg. addition to greenhouses, Bronx Park; also furn. 6,000 lin. ft. two pipe iron railing.....	C. B. Stover, Pres. Pk. Bd.
Pennsylvania.....	Tarentum.....	Sept. 9, 4 p.m.....	Bldg. 15 ton garbage furnace.....	Geo. Douthett, Jr., Chm. Prop. Com.
Pennsylvania.....	Danville.....	Sept. 10.....	Bldg. retaining wall; Danville river bridge.....	H. C. Blue, Clk. Co. Comrs.
Kentucky.....	Louisville.....	Sept. 15, 2 p.m.....	Bldg. underground conduit system for fire department; also furn. rubber-covered lead-encased fire alarm cables.....	E. T. Tierney, Chm. Bd. Pub. Saf.

WATER SUPPLY

Martinez, Cal.—Martinez Business Men's Association has petitioned Council to take under consideration plans for better fire protection in this city.—J. H. Morrow, President.

Eastman, Ga.—Citizens have voted \$10,000 bonds for water.

Beecher, Ill.—Citizens have voted \$5,000 bonds to install and maintain water works.

Kansas City, Mo.—Dr. Walter M. Cross, City Chemist, has recommended new system to purify city water.

Albany, N. Y.—State Water Supply Commission has approved plans for new sources of water supply at Hornell, Youngstown, Croton-on-Hudson and Moravia.

London, Ont., Can.—Special castings for Huron st. pumping station to the Gartschore-Thompson Co., Hamilton, 4½¢. per lb.

CONTRACTS AWARDED

Schenectady, N. Y.—Laying of water mains in eleven streets to Joseph H. Clements, 25¢. per lin. ft. for 6-in. pipe and 22¢. for other size pipe; to A. J. Kalteux for laying of sanitary sewers in Sargeant st., Lansing st., and Palmer ave.; 6-ft. excavation, 14¢.; 6 to 8 ft. excavation, 18¢.; lay 8-in. sewer pipes, 15½¢. per ft. and build manholes for \$31.50 each.

Fidusio, Okla.—Construction of complete system of water works as per recent election to C. A. Rees, Tahlequah.

LIGHTING AND POWER

Geneva, Ind.—B. G. & C. Traction Co. is having plans drawn for a new sub-power station, to furnish power for Geneva-Celina division.

Indianapolis, Ind.—As preliminary toward preparation to bid on contract for city street lighting and to care for increasing business, Merchants Heat and Light Co. is arranging to install 10,000-h.p. engine at its new Washington ave. plant.

Shreveport, La.—Council and Chamber of Commerce have decided to have municipally owned natural gas system; employment of an engineer to prepare route for pipe line to the Caddo field and other preliminaries was authorized; establishment of the plant is expected to cost exceeding \$100,000.

Showhagan, Me.—Board of Trade is considering plan involving merging the several power rights, as now established by deed, into one new corporation, the issue of

\$1,000,000 bonds, and expenditure of proceeds in acquiring necessary property to build new dams, canals and power station.

Hagerstown, Md.—Frederick Railway Co. is considering plans for erection jointly by Frederick Railroad Co. and Hagerstown Railway Co. for big power plant.

La Grange, Mo.—City will construct incandescent street lighting system.

Frankstown, Pa.—Dodge & Day, 608 Chestnut st., Philadelphia, have been selected engineers for power plant to be constructed for Penn Central Light and Power Co.—E. B. Greene, Altoona, Superintendent.

Nashville, Tenn.—Council has agreed to submit new gas company franchise to vote of people on Nov. 8.

El Paso, Tex.—All telegraph, telephone and street car companies have been ordered to lay wires underground within next two years.

Edmonton, Alta., Can.—Commissioners have been authorized to collect data on cost of hydroelectric plant on Athabasca River.

Ingersoll, Ont., Can.—Electric Light and Power Committee has been authorized to prepare plans and specifications for new substation on Mill st.; tenders will be called as soon as possible.

CONTRACTS AWARDED

Weyburn, Sask., Can.—Extension to electric light plant to Allis-Chalmers-Bullock, Ltd., of Winnipeg, \$8,600; other bidders, Canadian General Electric, Winnipeg, at \$9,900; Leonard & Sons, London, Ont., \$10,700; Canadian Westinghouse, Winnipeg, \$11,300; Goldie & McCullough Co., Winnipeg, \$11,689; Robb Engineering Co., Winnipeg, \$11,790.

London, Ont., Can.—Substation in east end of the city, to Hyatt Bros., \$3,550.

FIRE EQUIPMENT

East San Jose, Cal.—Bids have been rejected for erection of fire house; revised plans will be prepared.

Oakland, Cal.—Council has passed ordinance authorizing Board of Public Works to construct fire engine house; \$13,000 has been appropriated.

Louisville, Ky.—Board of Public Safety has advertised for bids on 54,954 ft. of cable, each cable to contain forty wires, to be used as part of fire-line system.

Leominster, Mass.—City will purchase auto truck.

Oneida, N. Y.—City is in need of hook and ladder truck. Address Mayor Pfaff.

Houston Heights, Tex.—Council will take definite steps to provide fire protection at its next meeting, Sept. 6; proposition will be authorization of \$25,000 bond issue to provide for erection, equipment and maintenance of three fire stations.

CONTRACT AWARDED

Salina, Kan.—Council has purchased Mitchell "30" auto with touring car body; car is being renovated into fire truck.

BRIDGES

Columbus, O.—County Engineer Lindsay has prepared plans and estimates for reconstruction of Dublin bridge over the Scioto River; cost \$25,000.

CONTRACTS AWARDED

Anderson, Ind.—To John W. Scott, Ingalls, Ind., for construction of two concrete bridges, one 60-ft. span, \$1,290, and one 18-ft. span, \$525.

Indianapolis, Ind.—Construction of four culverts on Fall creek and Mud creek free gravel road in Lawrence township to Charles Hoover; total contract price \$3,046.92; two concrete and steel culverts in Decatur township to same, \$1,085; culvert on Madison road, in Center township, to Volpp & Fritz, \$840.

Three Rivers, Mass.—Construction of proposed bridge over Chicopee River, to W. N. Flynt Granite Cox, Monson, \$21,000.

Rochester, N. Y.—Building concrete bridge over Red Creek at Westfall road, to Whitmore, Rauber & Vicinus, \$10,572.50.

Ebensburg, Pa.—Building bridge over South Fork Creek, near Lovett, to William Schmidt, Johnstown, \$1,800; other bids, A. J. Lord, Hastings, \$1,950; Fetterman Engineering Co., Johnstown, \$2,090; to A. J. Lord, for bridge across Chest Creek, at Eckenrode Mills, Corroll Township, \$2,200; also contract for reinforcing roadway to Caroline st. bridge in Barnesboro, \$985.

BIDS RECEIVED

Oakland, Cal.—Construction of concrete culvert on Brookdale ave.; James Stanley, Jr., \$11.69 per lin. ft., \$1.75 per yd. for filling; Contra Costa Construction Co., \$9 per ft. and \$3 per yd.; M. Heffer, \$11.90 per ft. and \$2.50 per yd.